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SUFFIELD EVALUATION DRILLING PROGRAM

A REPORT SUBMITTED TO

THE SUFFIELD EVALUATION COMMITTEE

BY

EAST, KLOEPFER LTD.
petroleum consultants

SEPTEMBER, 1974

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SUMMARY

The Suffield Evaluation Committee's 77 well reserves evaluation program was conducted in two stages (Figures 1, 2 & 3). The summer 1973 program consisted of 27 wells located in an area of the Suffield Block not used for Military training exercises. The 50 well winter program was primarily conducted in the area of the Suffield Block used by the Military during the period April to November, 1973.

The Stage 1 drilling program utilized two rigs, commenced operations on July 9, 1973 and was completed in the field by September 3. Twenty two Medicine Hat and five Second White Specks wells were drilled in this program. The Stage 2 drilling program commenced field operations on October 16, 1973 and the last rig was released on February 19, 1974. Four rigs were used to drill the twenty-one Medicine Hat Tests, thirteen Second White Specks Tests, five Bow Island Tests, five Basal Colorado Tests and six Mississippian Tests.

All 77 drilled wells were completed and testing operations conducted. Completion operations were conducted during the period July, 1973 through March, 1974. Testing of the wells was undertaken from September, 1973 through June, 1974. Final cleanup of the well sites was completed during September, 1974.

A central communications and stocking point (Figure 3) was established on an unused Canadian Forces Base (CFB) Suffield airstrip. This center was manned on a 24 hour basis throughout the drilling program. All activities were co-ordinated with the Department of National Defence activities on the Block. The use of radio facilities supplied by Defence Research Establishment Suffield (DRES) and CFB Suffield facilitated a compatible use by the Suffield Evaluation Committee and the Department of National Defence. Excellent co-operation was received from DRES and CFB Suffield personnel throughout the field operations.

The existing roads and trails were, where possible, used for the field operations. The summer program was primarily confined to the DRES area and no access problems were experienced. The winter program was conducted in the center of the Block and the terrain and access significantly hampered operations. As a result of a very severe winter drilling costs for the winter program were approximately 35% higher than for equivalent summer operations.

Drilling operations on the Block encountered a normal amount of problems including minor surface hole difficulties due to gravel filled pre-glacial drainage channels, one artesian water flow and some subsurface boulders. Abnormal deviation control problems were caused by faulting and hard sandstone ledges at shallow depths. The maintenance of an adequate quality drilling mud system was also difficult during the winter program due to a general shortage of quality water and the cold winter. The shortage of quality water also significantly affected completion operations and costs.

Well logging operations generally went well with exceptions being caused by rough hole conditions. Only one successful "fishing" job involving logging tools was necessary. No logging tools were lost.

Cementing of both the surface and production casing strings required an extraordinary amount of supervision to ensure proper results.

Five minor pressure surges and one major blow out were experienced during the program. The blow out was under choke control at all times and the well was brought under control with minimum risk to personnel. At no time was there danger of a fire.

Completion intervals were selected from a combination of well logs. Perforations were achieved with either select fire jets or bullets. Milk River, Medicine Hat and Second White Specks wells were fractured using 30,000-50,000 pounds of sand for each zone. Most wells were dually completed in the Milk River and either the Medicine Hat or Second White Specks formation. As with the drilling operation the completion operations were significantly hampered, and considerable additional costs incurred due to the severe winter and resulting access problems. In addition the cellars required to accomodate below ground wellheads added considerably to expenditures for completions.

Testing operations were routine with the major field problem being that of access during the winter due to drifting snow and during the spring, because of muddy roads and well sites.

The cost of the evaluation program was controlled by competitive bidding for supply of materials and services and close field supervision of field activities throughout the duration of the program.

Extra costs for the evaluation program are attributable to the requirement of below ground wellhead completions, access and terrain problems within the Block, winter operations and the evaluation aspects of the program. The additional expense of having the wellheads below ground is estimated to be $3,500 per well. The cost of winter operations is about 35% higher than for summer operations. Evaluation aspects of the program are considered to have added 15-20% to the total cost.

The geology of the Block was assessed on a continuing basis throughout the drilling operation. In addition a complete reappraisal of the Block's geology was undertaken at the conclusion of the evaluation drilling program. Based upon this work approximately 90% of the Block is indicated to be productive of gas from the Milk River; 50% to be productive of gas from good quality Medicine Hat; 20% of the Block will be productive from low quality Medicine Hat; and 14% of the Block area to produce gas from the normal Second White Specks and 38% of the Block area should be productive of gas from low productivity Second White Specks. One well was completed for production from the Bow Island. Up to 20 sections are indicated as possibly productive by this discovery. The Glauconite discovery could also prove to have an area of up to 20 sections. The geological appraisal also indicated gas potential for additional zones in the Suffield Block.

Reservoir properties were determined for all zones having proved gas reserves. Comprehensive log interpretation techniques were used in developing net pay, porosity and water saturation values for the Milk River, Medicine Hat and Second White Specks Formations. Net pay, porosity and water saturation values for the Lower Cretaceous (Bow Island and Glauconite) discoveries were determined using conventional well log analysis techniques.

Reservoir pressure data indicates that the only reservoir experiencing interpretable drainage is the Medicine Hat formation offsetting the Atlee/Buffalo pool. Drainage is expected to be approximately 5 BCF sales gas.

Well test data was analyzed and average producing characteristics and correlations developed. These data were used to determine the recovery levels that may be expected from future gas production. Average well deliverabilities for the various formations are consistent with production characteristics of wells adjacent to the Block.

Gas reserves were assigned to each zone of the Block on a township basis. Reserves were classified as proven, probable and possible. Following is a summary of the sales gas reserves determined.

Suffield Block
Sales Gas Reserves - BCF

Zone	Proven	Probable	Possible	Total
Milk River	1,595	399	-	1,994
Medicine Hat	282	88	35	405
Second White Specks	98	-	59	157
Bow Island	7		34	41
Glauconitic	18		110	128
Total -	2,000	487	238	2,725

CONCLUSIONS AND RECOMMENDATIONS

OPERATIONS

The reserves evaluation drilling program successfully demonstrated that well drilling, completion and testing operations can take place concurrently with Military training, DRES trials and PFRA pasture operations. Harmonious co-occupancy of the Block surface requires considerable communication between the representatives of the Canadian Forces Base Suffield, the Defence Research Establishment, the pasture foreman and the operating agent for the drilling program. Based on the Evaluation Program experience a central communications and material stocking point manned whenever field operations are being conducted is required to ensure co-ordinated operations on the Block, particularly during periods of Military activity.

The large area of the Block, the limited road system within the Block and the rather varied terrain all contribute to difficult access within the Block. The problem is more severe in the Military training area and less severe in the DRES area. Planning to achieve maximum use of roads is a prerequisite to efficient drilling, completion, testing and production operations. Well access should make maximum use of roads and trails that currently exist. In contemplating production operations compressor stations and other surface facilities should wherever possible be located adjacent to the gravelled road system.

Shallow gas operations, conducted in winter, are less efficient because of the cold weather. During the winter of 1973/74 drifting snow added significantly to operating problems and program costs. The winter operations cost 30-40% more than equivalent operations conducted during the summer months. It is strongly recommended that drilling and completion operations be planned to occur during summer months.

The shortage of quality water experienced during the reserves evaluation program contributed to operating problems and well costs. Adequate water supplies for drilling and completion operations should be established well in advance of any planned field activities.

Completion and testing operations were hampered because of the requirement of below ground wellheads. The estimated extra cost for the 77 well program of having the wellheads below ground level is $270,000. In view of the safety problems and expense it is our recommendation that future wells located on the Block not use the below ground cellar concept.

The evaluation drilling program data gathering added significantly to the well costs. Average well costs to be experienced in a development drilling program could be 15-20% less than those of an evaluation program.

The occurrence of Milk River, Medicine Hat and Second White Specks formations is predictable over wide areas. Reservoir characteristics, however,change dramatically over short distances. In development programs the proposed zones for completion should be

selected and casing programs designed to accomodate anticipated multiple zone completions. After drilling, the well data should be fully evaluated and specific completion programs designed. Program economics can be achieved by bidding 10-15 zone completions at a time.

EVALUATION

Gas production has been established in most zones anticipated to be productive in the December, 1972 study. Specifically, saleable gas reserves have been established in the Milk River, Medicine Hat, Second White Specks, Bow Island and Glauconitic formations.

Additional potential for gas is considered to exist within the Block in the Basal Foremost, the Bow Island, the Basal Colorado and in the Sunburst/Cutbank. Additionally, oil potential may exist in the Glauconitic and Sunburst/Cutbank sands.

Within a number of well bores, portions of the "Medicine Hat Zone" and the "Second White Specks Zone" contain intervals resembling productive zones in the Milk River. It is recommended that one or two of the best examples be evaluated.

Exploration potential exists in the Paleozoic sediments. This potential may be in part analyzed by selecting one or more of the more prominent topographic features on the Paleozoic surface and conducting sufficient seismic to examine the feature in detail. If seismic indicates structure within the Paleozoic, then a deep Paleozoic test is recommended.

The logging program used for the evaluation program provided the information necessary to derive reservoir characteristics for the various formations. The Milk River, Medicine Hat and Second White Specks porosity values ranging from 12-16% and water saturation values of 55-70% are considered to be representative of the Upper Cretaceous pools. For those areas of the Block in which reliable log interpretation is sparse, future drilling should provide the data required for a detailed evaluation of all areas of the Block. Wells to be logged with multiple evaluation devices should be selected in advance to insure adequate coverage.

Pressure information indicates that Medicine Hat gas is being drained from the Block by production from the Atlee Buffalo Medicine Hat field. Drainage can be curtailed by developing production on the Block within the area being drained. Drainage from other formations (Milk River, Second White Specks) within the Block cannot be interpreted from current pressure information.

The well flow test information indicates that the majority of the reserves can be economically developed using current operating practices and at current gas prices. Dual zone and commingled production operations will be required to optimize recovery. Development programs should be designed to maximize well bore utilization in the production of gas from the low deliverability portions of the pools.

RESERVES

The total indicated gas reserve of the Block amounts to 2,725 BCF. Of this 1,994 BCF (73%) is in the Milk River Formation. Generally this reserve would support development. However, because of low productivity, about 10% will have to be produced in association with development of either the Medicine Hat or Second White Specks formations.

The 335 BCF of Medicine Hat reserves contained in the Atlee/Buffalo - Medicine Hat and Medicine Hat B Pools can be developed on its own merit. The 70 BCF of Medicine Hat reserves estimated for the Alderson, Jenner and Princess Medicine Hat pools will generally because of low productivity, have to be produced in association with either Milk River or Second White Specks development.

The Alderson Second White Specks pool (77 BCF reserve) is a good development prospect. The Princess Second White Specks pool (80 BCF) cannot be fully developed on its own merit because of low productivity. A large percentage of this pool's reserves will have to be produced in association with either Milk River or Medicine Hat production.

The Bow Island and Glauconitic discoveries are excellent development prospects and follow up wells should be considered early in the development of the Block's reserves.

INTRODUCTION

The Suffield Evaluation Committee retained Last, Kloepfer Ltd. to assist in the conduct of the 77-well evaluation drilling program undertaken on the 644,000 acre Suffield Block located in southeastern Alberta (Figure 1). The consultant's assignment from the Committee was for continuing technical input to all aspects of the planning, co-ordination and execution of the Evaluation Program, in response to the needs and direction of the Committee.

The Committee set policy and provided general direction for the drilling evaluation program. The consultant was responsible for all planning and execution of the drilling and evaluation operations. The work performed by Last, Kloepfer Ltd. for the Committee is the subject of this report.

Prior to implementing the field activity the exploration planning, drilling programming, contractor and supplier selection, bidding, bid analysis and award recommendation work was undertaken. In addition, the various phases of the proposed evaluation program were co-ordinated with the Canadian Forces Base Suffield and Provincial and Federal Government departments relative to the planned on-site operations.

The drilling, well completion and testing operations were organized and field supervision controlled to ensure a high technical standard and a close control of field costs. The technical data from the drilling and testing operations were continually

monitored and field changes to procedures implemented as necessary to improve the quality and utilization of the data.

All invoices for equipment and services were reviewed and approved by the Consultant prior to being forwarded to the Committee for final approval for payment. In addition, the Consultant maintained a complete accounting control throughout the program.

Routine regulatory matters were handled directly with the agency or department concerned. The interpreted results of log analyses and well test data were filed with the Energy Resources Conservation Board in addition to the normal well information required under the Oil and Gas Conservation Regulations.

A continuing geological appraisal of well data was maintained throughout the drilling program. The potential gas reservoirs within the Block are identified on Figure 2.Cross sections, structure maps and zone isopach maps were developed. These data were used by the Committee to set the final location of the deep tests drilled near the end of the program. A complete re-appraisal of the Block's geology was undertaken at the conclusion of the evaluation drilling program.

Well data obtained during drilling, completion and testing operations were used to define the reservoir and producing properties of the gas bearing zones within the Block. These properties, combined with the geological interpretation, were used to develop estimates of the productive limits of the indicated gas pools. Based

upon these data an appraisal was made of the gas in place and recoverable sales gas reserve of the Suffield Block.

The planning, drilling, completion and testing activities are discussed in the first section of this report. Field operating practices to be considered for subsequent development activities are noted. The geological and engineering evaluation of the well data obtained as a consequence of the evaluation program are presented in the second portion of the report. The natural gas reserves of each productive zone within the Block are detailed in the last section of this report.

D I S C U S S I O N

OPERATIONS

GENERAL

1. PLANNING

The access to the Block granted by the Department of National Defence to the Committee required that planning for field operations provide for:

Operations be scheduled to respect the time of access available for various parts of the Block,

Utilization by the Committee of existing roads and trails,

Compliance by all Contractors with Military traffic and safety regulations,

Wells to be protected in concrete cellars.

The geological evaluation recommendations of the Resource Evaluation Study of the Suffield Block, dated December, 1972, and prepared for the Province of Alberta, after detailed review by the consultant, were adopted by the Committee. Field inspection of all proposed well sites was conducted and changes made where necessary because of terrain problems. Well locations were modified by the Committee later in the program because of the additional information provided by drilled evaluation wells.

The reserves evaluation drilling program was conducted in two stages. Stage 1, drilled in the summer of 1973, consisted of twenty-seven wells. The fifty-well Stage 2 program was drilled in the winter of 1973-1974. The Stage 1 program was located in an area where no army operation had been planned for the summer of 1973. The Stage 2 program was located in the area normally used by the military during April to November of each year.

Typical drilling,completion and testing programs developed and used during the evaluation program are detailed in Appendix I.

The wells drilled in each program stage are listed on Table 1 and shown on Figure 3. A summary follows:

	Stage 1		Stage 2		Total Program	
Depth Tested	Wells No.	Average Depth Feet	Wells No.	Average Depth Feet	Wells No.	Average Depth Feet
Milk River - Medicine Hat	22	1,500	21	1,670	43	1,580
Second White Specks	5	2,100	13	2,180	18	2,160
Bow Island			5	2,490	5	2,490
Basal Colorado			5	3,000	5	3,000
Mississippian	—	—	6	3,380	6	3,380
	27	1,600	50	2,220	77	2,010

Individual well data sheets tabulate, by zones, pertinent drilling, completion and testing information for each well.

Competitive tenders were invited from interested contractors for major services and supplies for each segment of the program. The Stage 1 tenders were requested in June, 1973 and the Stage 2 tenders in August and September. A typical request for a service proposal is shown as Appendix 2.

The returned bids were analyzed and a recommendation for each service or supply made to the Committee. Awards were made to the successful bidder on the basis of the lowest acceptable bid for the following services and supplies; surveying, drilling, casing, tubing, coring, logging, drillstem testing, centralizers, casing equipment, cementing, wellsite services, wellhead cellars, perforating, fracturing, service rigs, packers, wellheads, testing, drilling supervision, completion supervision, core analysis and gas analysis.

Last, Kloepfer was responsible for administration of the contracts and for supervision of all field activities.

2. MATERIAL SUPPLY AND COMMUNICATIONS

To facilitate both the supply of materials and communications, an office and storage yard was set up on the old airstrip at Canadian Forces Base Suffield. This office was manned 24 hours per day, seven days per week, while the drilling was in progress. Clerical staff maintained inventories of casing, tubing and other materials necessary for the large scale drilling operation. Truck loading was supervised to ensure that proper equipment was transported to each lease and directed on to the proper roads through the Block. This was most important when Military and/or DRES activities were taking place.

Extreme care was also taken to insure all vehicle traffic checked at the base office, particularly when the weather was bad, to find out the exact route to each rig. Traffic not following this procedure occasionally became lost necessitating the sending out of search parties. Fortunately, this proved to be a very minor problem.

Throughout the program, the most difficult problem was to effect a working compatibility between a multi-rig gas well drilling and evaluation program, the tests and trials conducted by the Defence Research Establishment Suffield (DRES), and the Military training carried out jointly by Canadian Forces Base Suffield (CFB Suffield)and the British Army Training Unit Suffield (BATUS). Both DRES and BATUS activities resulted in various sections of the range being closed for periods of up to three weeks. The Military training involved live ammunition firing by tanks, artillery and infantry, while DRES activities involved various exotic gas and explosives trials. In both cases, personnel safety was of top priority.

With the kind co-operation of the DRES and CFB personnel, the Suffield Evaluation Committee was able to use the radio communication system which existed throughout the block. Coverage was unlimited and all rigs and supervisory personnel were in constant communication with our base office, DRES operations control and the CFB range control. As a result, the drilling supervisory staff were able to continuously monitor the field activities. Without

this radio network, it is our opinion, the operation would have taken considerably longer to complete because of the additional time-consuming communications required by the service and supervisory personnel to complete this assignment.

The Suffield Evaluation Committee was also supplied with copies of Block activity calendars, so that, along with daily reports by the supervising engineer, the drilling rig movements could be properly co-ordinated to avoid either rig down time or unwarranted interference with the various military and defence research activities.

Consequently, the 77 well drilling program was carried out with no disruption of drilling, completion or testing activities, and no drilling personnel or equipment became involved in the "live" firing, chemical or explosive trials.

A further complication was the presence of PFRA operate grazing pastures along the eastern side of the military range. Up to 7,000 head of cattle were located on these ranges, which meant the added responsibility of keeping the many gates closed. Cattle guards were installed at key traffic points, alleviating the gate problem, and no serious complaints were submitted by the pasture foreman.

The program as a whole, successfully demonstrated that exploratory and/or development drilling can be carried out on the Suffield Military Block, in association with DRES activities, military training, and PFRA grazing.

3. SURVEYING

The wellsite location surveys were carried out utilizing as many as four crews in order to have the work done ahead of the drilling rigs. After the Stage 1 program, the crews established all the necessary section corners for the Stage 2 program. This proved a valuable asset, as survey monuments and bench marks, were few, especially in the north half of the block, and early winter snows obliterated old survey signs. No particular problems were encountered during the site surveying other than general difficulties due to rough terrain.

4. TERRAIN AND ACCESS

The block is an uninhabited area, with only four graded main roads in the 1,000 square miles. These main roads are confined mainly to the DRES area (Figure 3). One road (Coyote) leads east from the main gate of the base for 21 miles, intersecting with a road (Buffalo) leading north from the southeast gate for approximately 20 miles. Buffalo, in turn, intersected with an east-west road (Antelope) which started east from the Jenner Road and was graded for 24 miles. The last of the graded roads (Rattlesnake) commenced 1/2 mile east of the main gate, heading more or less northeast through the block to an intersection with Antelope, and then proceeding northeast, past Easy Lake, to an area known as the "One-Mile Square", a distance of approximately 32 miles. Total graded and graveled roads, therefore, consisted of only 97 miles.

The rest of the access system consisted of bladed prairie trails marked off in squares and circles to accommodate various DRES test activities. These roads served mainly as a source of geographic location, to direct traffic to the various drill sites, and for this purpose proved invaluable.

The summer program proceeded without any particular access difficulties since it was confined mainly to the DRES area. Only the Middle Sand Hills area, in the northeast corner of the Block, presented access problems during this Stage. To drill locations within this range of pure sand hills it will be necessary to construct a grid of clayed roads and pads to be used as drill sites. Any other approach to this area will involve extensive cat towing or the use of exotic tracked vehicles. Therefore, two locations were moved to the western edge of this range of hills to avoid these terrain problems, but still provide evaluation data.

The winter program took place in the heart of the Block and the terrain proved to be extremely difficult. Although relatively flat on the south and west sides, the heart of the Block is broken up by a series of deep, rugged coulees; Easy Coulee, Stuart Depression and the Ross Depression. The coulees, besides presenting steep banks, boulders and winding trails, also served as traps for a series of alkali lake systems, which mainly were dried up by fall, but presented an impenetrable barrier to through

traffic. The east side of the block is bordered by the South Saskatchewan River with as much as 500 feet of relief to the river, and the resultant deep coulee along the banks.

The access trails, being graded about one foot below prairie level, and with the edges banked with rocks and debris, proved a perfect snow trap. The trails could be plowed out, but created further problems with the next windstorm filling the trail to an even greater depth. Alternate routes on the prairie proved treacherous, due to an abundance of boulders, badger holes, and old water courses, and the resultant slow down of traffic was more expensive than the plowing.

In summary, the terrain and access for the winter 50-well program proved to be extremely difficult. Coupled with a very bad winter for snow and wind, the net result was to increase costs to a startling degree. Cats and graders were in constant use for towing and snowplowing from November 15 to the end of the winter.

DRILLING

1. EQUIPMENT

The drilling equipment as supplied by the contractor for Stage 1 consisted of two shallow depth highly portable rigs, specifically designed for drilling the shallow gas zones of south-eastern Alberta.

Whitco Rig #2, a Walker-Neer hydraulic rig, drilled 19 Medicine Hat tests between July 9 and September 3. The only major time loss occurred when the power swivel failed, causing a four day delay. Drilling time, including rig move, averaged 2.8 days per well.

Whitco Rig #1, a conventional Failing 2500 rig, drilled five Second White Specks and three Medicine Hat tests between July 29 and September 8. The only major breakdown occurred when the derrick was accidently dropped during rig up, causing a six-day delay. Drilling time, including rig moves, averaged 4.5 days per well. The longer average time is due to the fact that Second White Specks wells are approximately 600 feet deeper than Medicine Hat tests. The Stage 1 program was concluded at the end of 94 rig days.

After the experience of the Stage 1 program, it was decided that four rigs would be required to complete the Stage 2 program in a reasonable length of time so as to have the completions, well testing, and evaluations, along with the report, finished during the summer of 1974. The work was divided between two contractors, Whitco Drilling Ltd. of Medicine Hat, which again supplied two shallow rigs to drill 34 holes, and Kenting Petrolia Drilling Ltd. of Calgary, who supplied two rigs to drill

16 wells in the 2300 to 3600 foot depth range.

The first rig on the Stage 2 program commenced operations on October 16, 1973, and the last rig was released on February 19, 1974, for a total of 352 rig days. The three rigs which were still on the program were shut down over the Christmas and New Year's holiday in consideration of the general non-availability of rig moving equipment during this period of time.

A total of 154,485 feet of hole was drilled during the period July 9, 1973 to February 19, 1974. A detailed breakdown of the rigs, depths and footages is given in Table 2.

2. SURFACE HOLE

The block is marked with two geographic features affecting surface gravel deposition. One is a subsurface feature known as the Lethbridge Channel, which extended in two fingers along the east and west sides of the block. Depth of the gravel encountered in this channel varied from 35 to 435 feet and, as a result, caused drilling problems in 20 wells. The main problem was serious lost circulation while drilling the surface hole, and sloughing encountered after removal of the drill pipe. This was overcome by mixing viscous mud and sawdust while drilling the surface hole, and by drilling sufficient hole, so as to be able to contain all surface gravels behind the seven inch surface casing.

The summer program initially called for a minimum of 160 feet of surface casing. When this proved insufficient because of the surface gravels, the amount was adjusted to 450 feet, or as required.

Surface casing for the winter program was set at a minimum of 300 feet, or as required. This flexibility was built in so as to allow the well site supervisor discretion in selecting surface casing depth, as the whereabouts of the Lethbridge Channel became pinpointed by the drilled wells.

A second problem was the presence of subsurface boulders, throughout the block. Fortunately, only two holes encountered boulders, and the loss of time was not serious.

Fortunately, only the well in 6-34-19-4 encountered artesian water flow during the drilling program. Fresh water flowed outside the surface casing after primary cementing had been completed. The location was in a bowl in the hills, on the east side of the Ross Depression. Corrective measures involved running two strings of one inch tubing down between the casing and the hole, killing the flow with weighted mud, and then recementing. This particular remedial operation cost approximately $3,000 which, had there been several such occurrences, would have added substantially to the costs of the program.

3. DEVIATION

Although southeastern Alberta is not known as an area where hole deviation occurs, five of the wells drilled below the Second White Specks encountered this problem. Subsurface faulting runs in a northwest-southeast direction across the block. Any wells on or near these faults had deviated well bores. The most

serious case was the well in 6-2-18-6, which had a maximum deviation of 6^{o} at a depth of 1,881 feet and a final deviation of 3^{o} at total depth. Other wells encountering deviation control problems were 6-29-19-6, 6-8-20-8, 11-16-20-8 and 6-12-19-8.

After the experience of 6-2-18-6, which first demonstrated the seriousness of the problem, a more vigilant well surveying program was carried out, and deviation was controlled by means of reduced bit weight and higher bit RPM. Future wells along the fault line should consider use of a bottom hole assembly designed for the pendulum effect of suitably positioned three point reamers and/or stabilizers.

Easy Coulee, a depression with approximately 200 feet of relief, stands near the center of the block and runs northwesterly. Because of this relief, sandstone outcrops are observed in many places along the banks, which appeared to be dipping at angles other than regional. The well in 6-28-18-6 encountered these ledges at 232 feet, and the resultant dogleg in the hole prevented the surface casing from being run to its programmed depth of 300 feet. Subsequent to reaching total depth, an attempt was made to log the hole with the tools hanging up at 265 feet. In endeavouring to clean out the ledges, the original hole was inadvertently sidetracked, and a new well bore drilled. Consequently, the decision was made to deepen the well to the Second White Specks, instead of the originally proposed Medicine Hat, and complete only in that zone. An extra expense of ap-

proximately $25,000 was incurred. Future locations should be selected so as to avoid these ledges whenever possible. If unavoidable, the surface holes would have to be drilled with a packed hole hook-up of drill collars and reamers to ensure clear surface holes to run optimum depth casing.

4. WATER SUPPLY

The absence of accessible fresh water was a major problem for both the Stage 1 and Stage 2 programs.

It had been anticipated that water could be obtained from the South Saskatchewan River, but it was found that there were only two places where a tote road extended to the river's edge, one easy and one difficult. The difficult road, used in Stage 1, is in the southeast corner of the Block in Section 16-15-5 W4M. The easy road, used extensively in the Stage 2 program was at Drowning Ford in SE/4 of Section 26-18-5 W4M. These two sites served only a very limited part of the program. After the various surface ponds had been exhausted, or were too far from the drill site to be practical, alternative water sources had to be found.

For the Stage 1 program, a water well was drilled and completed at 135 feet in 6-5-19-4. Tests indicated pumping rates of 60 GPM (2500 BPD) and a portable electrical generator powering a down hole turbine pump was intalled. The well was used for all drilling and completion operations in the northeast

corner of the Block.

Prior to the start of Stage 2, a water well test program was initiated in the northwest sector of the Block. An unsuccessful test to 510 feet was drilled and abandoned in 14-28-19-7. A second test was drilled and completed at 335 feet in 6-32-18-7. After the installation of pumping equipment an initial rate of seven GPM (300 BPD) was established. Due to the low productivity this well was unable to contribute to the water supply for the winter program.

During December, January and February, surface water was very difficult to find, as the very cold weather froze most ponds to the bottom. The contractors experienced extremely high haulage costs for water as a result. Surface water in the block is, of course, mainly alkali in nature, and suitable for only a portion of the well drilling. Fresh water had to be found for the cementing which necessitated long hauls (up to 17 miles one way) causing some delay on the wells remote from a water source.

A prime consideration for any future drilling would be the prior establishment of good water wells, with sufficient output volume to adequately supply the program.

5. DRILLING FLUID

Hole condition, while drilling in this area, is affected by two operating procedures. They are the nature of the drill-

ing fluid and time of exposure of the drilling fluid to the rock penetrated.

Except for the Mississippian tests, the mud systems were kept simple, partly to reduce costs, and partly because the small rigs do not have the necessary mixing equipment to maintain a sophisticated mud system.

In the Block, most of the rock penetrated consists of shale, and sand/shale sequences down to the carbonate of the Mississippian. All of these shale sections are subject to heaving and sloughing when exposed to fresh water for any period of time. To combat this effect, it was decided to mix a drilling fluid system consisting of three percent (by weight) potash (KCl) and water. The object of this treatment was two-fold; to inhibit shale sloughing, and to render the fluid filtrate lost to the sand sections compatible with the reservoir waters, which are brackish to lightly salty.

In the case of the Stage 1 summer program, the mixing of the KCl was accomplished without difficulty even though Whitco #2 used only pits. With the high ambient temperatures, the mixing water had a sufficiently high temperature to allow the potash to readily dissolve. Consequently, a little difficulty was experienced in logging the wells, which proved to be the most relevant indicator of hole condition. Coring was also completed without difficulty with core recoveries in the order of 99.5%.

More hole problems were encountered in the Stage 2 program, which were attributable to three causes:

a) Insufficient water supply, particularly during the latter part of the program, did not allow for proper potash dilution. Consequently, a few holes were drilled to total depth with relatively the same drilling fluid composition as was used to drill out the surface casing.

b) Some difficulty was also experienced in getting the potash additive into solution, when temperatures dropped below zero. The net result was that insufficient potash was added to the system to have long term beneficial effects.

c) Breakdown time causing undue exposure time of the drilling fluid to the formation, caused hole problems, especially when trying to log.

All these problems led to additional tripping and mud conditioning time in order to complete the logging program. Considering all factors, the program was completed with relatively little hole trouble.

Near the end of the program, two experimental types of drilling fluids were used. Whitco #2 and Kenting 35 were selected as the experimental rigs with the following results:

a) Kenting 35

Drilled its last hole (10-22-19-7) to the Basal Colorado

using Delta Drilling Fluid additive in conjunction with 5% KCl. This fluid additive is reported to enhance shale inhibition and aid in flocculating the system thereby reducing mud weight. No particular difference was noted in either drilling time or caliper log over previous Basal Colorado tests. One successful drill stem test was run, and good cement returns were obtained on the production casing which was run to the Second White Specks.

b) Whitco #2

Drilled one Medicine Hat test (6-17-17-8), which was also cored in the Milk River, using the Delta Fluid. Some improvement was noted in coring time, and also the core looked in much better condition than those drilled with straight KCl. Logging proceeded without problem, the caliper log appeared better than average for this rig, and good cement returns were obtained on the production casing.

Drilled its last well (6-11-17-6) to the Second White Specks using a modified DAPP system. Results were not conclusive, but it was felt that this rig was not properly equipped to mix this sophisticated mud system, and it is doubtful if the mud system had a fair trial.

Generally the KCl system appeared to be as effective as the more complicated mud systems. In this area, with the type of rig available, any exotic mud system would require a central mixing, storage

and distribution plant in order to obtain maximum results and benefits.

6. LOGGING

Stage 1 wells were programmed to be logged with a Spherically Focused Induction-Gamma Ray tool configuration, a Sidewall Neutron Porosity log and a Compensated Formation Density log. This suite was followed by a Gamma Ray correlation log in the cased well bore.

The Stage 2 program used an Induction Electrical - Spontaneous Potential sonde and a Gamma Ray - Compensated Formation Density tool. The Sidewall Neutron Porosity tool was replaced by a combination Compensated Neutron Gamma Ray tool for cased hole logging. As in the case of Stage 1, occasional rough holes were also logged with a Sonic Log to provide additional porosity control.

In general, logging went well, with exceptions due to rough hole condition. Excellent communication and cooperation was maintained between the logging contractor and the drilling supervisors so that relatively little time was lost in waiting on equipment. Most of these delays were due to equipment being unavailable due to prior commitments or malfunctioning of the tools.

No logging tools were lost, and only one fishing job involving logging tools was encountered. This fishing job took place at the Mississippian test, 11-16-20-8, which also experienced considerable deviation trouble. Maximum deviation was three degrees at 3026' which came back to one degree at 3187' and finished at 2.75 degrees creating a dogleg in the hole. The inducation logging tool stuck at 3077' while running in.. Rather than pull the line apart and let the tool drop, a Bowen side door choke was run in on the drill pipe to recover the tool with the logging line intact. The fishing operation was successful, but subsequent logging runs were unable to go deeper than 2950' due to the line laying on the side of the hole and cutting into the dogleg. Due to the 3.5 inch drill pipe used on the rig, no tools small enough to go through could be obtained, so open hole logging operations were suspended.

7. CEMENTING

Proper cementation of both the surface and production casing strings proved to be one of the most difficult and trying problems encountered in the 77-well program. The best cementing materials and techniques, as supplied by two different cementing companies, were utilized and the end result was not completely satisfactory. Fortunately, only one well, 6-15-18-5, a Second White Specks test, showed positive evidence of poor cement bonding when, while fracing, communication was established outside the production casing to the surface. No other evidence of communication between zones was found during well completions.

Board requirements were that both casing strings had to be cemented to the surface. In most cases satisfactory returns were obtained, but in several instances the cement would fall back after pumping had stopped. This was particularly true in the case of cementing production casing.

Problems in the cementation of the surface casing strings could be anticipated as they were in direct proportion to the problems involved in drilling the surface hole. Where drilling problems did occur, additional cement was ordered, and the results were generally satisfactory. In a few cases, where the cement fell back, cement and sawdust were mixed and dumped in from the top, around the outside of the seven inch casing. This procedure insured that the top of the casing would remain solid and support the weight of the BOP stack without wobbling during the drilling period. During the Stage 1 program, some success in maintaining cement fill was obtained by running a cement basket one or two joints below surface, depending upon the gravel top.

Proper cementation of the production casing was an ever present problem. As with the surface casing the drilling program provided for cement volumes varying with proposed well depth, and allowed for 50 percent over theoretical requirements. In both Stage 1 and Stage 2 programs, the required cement was altered to fit hole conditions as determined by caliper log, drilling time, or other indicators of hole problems. Consequently, no shortage

of fill up volume should have occurred at the time of cementing the producing casing strings and theoretically all wells should have had cement returns to surface. Such was not the case. Two wells of the Stage 1 program and twelve wells of the Stage 2 program, had no cement returns to surface on the production casing. As an ERCB licence requirement cement top logs were run, which indicated the cement top to be from 100 to 800 feet below surface. Remedial action as required was undertaken to insure that all gas bearing formations were effectively cemented.

Several wells were observed to have the cement fall back after good returns had been obtained. In all cases where cement returns were not obtained or cement had fallen back, gas bubbling to varying degrees, was observed in the annulus between the 7" surface casing and the 4-1/2" production casing.

Reasons for the cementing problems are thought to be:

a) Prior to logging it was customary to raise mud viscosity to a high level by additions of gel. Resultant mud had funnel viscosities of 60-150 and weights of from 9.0 - 10.0#/gallon. This mud, with no water loss control additive, built up a very thick, sloppy filter cake during logging.

b) Although the 4-1/2" casing was run into the 6-1/4" hole open ended (except in the case of wells cased below the Second White Specks), to minimize hydraulic pressuring of the well bore, it is possible that formation frac pressures could have been built up due to the heavy mud used for logging.

c) Cement was mixed and displaced at rates of 4 - 10 BPM in order to insure the cement slurry was in turbulent flow and give maximum hole cleaning effects. This may have resulted in the thick filter cake being swept off the walls of the hole, causing partial hole bridging, and feeding of cement slurry to previously opened formations. Although full lost circulation was never noted, while cementing the production casing, partial losses would not have been observed. This situation would account for the occurrence of cement fall back.

d) During the time after the caliper log was run until the casing was cemented hole conditions could change to such an extent that the cement mixed was not sufficient to fill the hole. This situation, coupled with (b) and (c) would explain why consistent cement returns were not obtained.

The cement top logs which were run also investigated the quality of the bond between cement to casing and cement to formation. In nearly all cases this was found to be good, indicating satisfactory downhole cementing practices, but tophole problems demonstrate a need for improvement.

Subsequent to drilling the Suffield Evalution Wells, several operators in the Medicine Hat area have modified the cementing program with relatively good success on the first few wells. Two changes to the program utilized in the Suffield program would be:

a) Prior to displacing the cement slurry, a 10 barrel scavenger slurry is pumped ahead. The scavenger slurry is a light weight cement slurry with a density approximately halfway between the drilling mud and regular cement slurry density.

b) Twelve to 18 percent sodium chloride is added to the cement slurry to provide additional expansion during curing and to provide a cement filtrate which should prevent expansion of the shaly formations.

Future drilling programs in the Suffield Block should consider this approach as a solution to the tophole cementing problems.

8. PRESSURE ABNORMALITIES

Blow outs, or uncontrolled well pressure surges, were fortunately confined to four minor occurrences during the Stage 1 program, and one major and one minor occurrence during the Stage 2 program. Details of the Stage 1 blow outs, as supplied to the Energy Resources Conservation Board, are included in Appendix 3. The minor occurrence during Stage 2 merely required weighting of the mud system and was, therefore, not reported.

Briefly, the major blow out of the program occurred while drilling 6-19-18-8, a scheduled Mississippian test. At 3373 feet in the Detrital zone above the Mississippian, it became necessary to trip for a bit. While tripping, the well blew out at 5:30 A.M.,

January 24, 1974. While making preparations to mix the necessary weighted mud to kill the well, the gas flow was vented through two 3.5 inch drill pipe flare lines. Choke manifold pressures of 750 psig were recorded, with gas flows estimated at 50 MMCFD. During the course of the venting period, it became necessary to shut the well in. The wellhead pressures did not rise above 750 psig, which indicated that the upper low pressure zones were being charged by the high pressure gas flow. A slug of 12.5#/gallon mud was pumped into the drill pipe, killing the gas flow long enough to install a drill pipe valve. Pipe was then stripped through the Hydril Blow Out Preventors to 3253', and killing procedures were carried out until 5:00 A.M., January 30th. After cleaning out to 3373', the mud weight was dropped to allow all the charged upper sands to vent. This procedure proved to be unsuccessful, so that the mud weight was again raised to 12.3#/gallon, and the well was circulated until dead. Logs were successfully run to total depth, and 4 1/2" production casing run and cemented to surface, with the rig being released at 4:00 P.M., February 4, 1974.

The well was under choke control at all times, and there was never any danger of fire. The rig crews performed very well, and the whole operation was carried to its successful conclusion with a minimum of risk.

9. FUTURE DRILLING CONSIDERATIONS

Future drilling operations in the Block should consider:

a) Establishment of a central communications base and material stocking point. Good radio communication is essential to the efficacy of any drilling program in this area.

b) Development of a good fresh water supply in each of the four quarters of the block. Fresh water is required for proper cementing and stimulation procedures.

c) The establishment of a central mud mixing, storage, and distribution facility. This would reduce water consumption, and also eliminate the problems encountered when attempting to control mud properties on inadequately equipped rigs. Mud could be trucked from hole to hole, with fresh mud added from the central facility. Rigs drilling in areas of known surface gravels could then spud with a proper controlled mud system and prevent serious lost circulation, and/or hole caving problems.

d) The use of cement baskets on both surface and production casing strings in order to maintain the cement fill-up at the surface, and perhaps eliminate annular gas leaks.

e) Using only centralizers and eliminating the use of scratchers on production casing. At shallow depths it is difficult to properly reciprocate 4.5 inch casing in order to obtain maximum benefit of the scratchers.

f) The use of 12% - 18% salt cements to improve bonding, and therefore, zonal segregation, in multizone completions.

g) Drilling activity should not be undertaken on the Block between November 15 and April 15. Operational problems and extra costs which can be incurred due to inclement weather conditions more than offset any time saving.

COMPLETIONS

1. CELLARS

Block access provisions required that concrete cellars be installed so that the wellheads would be below ground level. These cellars were installed after the drilling phase and prior to well completion. In installing these cellars, an area around the well was excavated and a six-foot deep cement ring installed around the well. This ring consisted of a 4' deep section at the foot with a two foot deep section placed on top of the lower ring. The wellhead equipment was installed so that the top of the lower section of the cellar and wellhead were about twenty-four inches below the ground surface.

Prior to perforating and fracturing an eight foot long, four inch diameter riser was temporarily installed in order to permit completion operations to occur above ground level. After the wells had blown back for clean-up this riser was removed and the wellhead installed. During this stage of the operation the crew members were required to work below ground level in a confined space with relatively heavy equipment.

Prior to testing the wells eight foot long, two inch diameter risers were installed to facilitate above ground level well control.

After testing of the wells, the risers and the top portion of

the cellar (the two foot deep portion of the ring) were removed and the four foot portion covered with a concrete lid and two feet of earth.

In view of the safety problems and considerable additional expenses required to complete the wells below ground level it is our recommendation that future programs in the Block do not utilize the below ground cellar concept. Another system compatible with development well operations and military activities must therefore be designed.

2. COMPLETION INTERVALS

Selection of Milk River completion intervals during Stage 1 of the program utilized log interpretation presentations prepared by computer analysis of the basic well logs. It was found that this presentation gave good definition of permeability, porosity, and hydrocarbon content of the various stringers in the Milk River section. The second stage of the program used this method until January, 1974, when delays in computer processing and coordination of fracturing programs during winter weather conditions prevented continued use of the system.

Based on the experience gained using the computed interpretation results, perforation programs were developed utilizing the open hole Induction-Gamma log in conjunction with the cased hole Gamma/Neutron correlation log.

Possible zones for completion generally had the following main characteristics:

a) resistivity greater than 12 ohm meters

b) gamma ray characteristics indicating higher than average sand content.

c) neutron responses indicating strong gas effects.

Potential Medicine Hat and Second White Specks zones were readily identified from log analysis and no problems arose relative to the selection of completion intervals. Similarly the Bow Island and Glauconite zones were selected from the basic well logs.

3. PERFORATIONS

Initially the Milk River zone was perforated over the entire indicated net pay section using 20-40 select fire jets or bullets.

To evaluate the effectiveness of the early completions, flowmeters were run in a number of wells. The flowmeter surveys indicated that not all the zones which were perforated contributed to production. Zone effectiveness did not appear to directly relate to log characteristics or other factors which were readily apparent. It was found that the number of effective contributing perforations was seldom more than ten. Frequently only four or five perforations were contributing to the flow of the well.

During a number of Milk River treatments the limiting rate

of 10 or 12 BPM at 4,000 psi (maximum allowable pressure) would be encountered during the initial period of the fracture; this rate would increase as the fracture progressed. It was in wells of this type that three to five perforations were contributing to the gas flow. An approximation of the effectively-treated perforations could generally be determined by dividing the initial frac rate by three. This would indicate that a limited or pseudo-limited entry treatment was resulting. It was found that wells with 20 or less perforations exhibited improved flow rates and normally fractured without sandoffs. Subsequently the majority of the Milk River wells have been completed using 20 or less perforations.

The Medicine Hat and Second White Specks zones were perforated over the entire indicated pay using a density of two perforations per foot. Because of the relatively thin sections involved the total perforations were generally less than 20 per zone.

The Bow Island and Glauconite zones were selectively perforated from the log indicated pay.

4. FRACTURING EQUIPMENT, MATERIAL

The equipment and material required in the fracturing of the wells included:

a) Blender - 60-80 BPM

b) 2,000 H.P. pumpers

c) CO_2 trailer and pumper

d) Sand and chemical trucks

e) 30,000 - 50,000 pounds of sand

f) 800 barrels of water

Fracture fluid additives included 20 pounds of fine ground silica flour as fluid loss agent and two gallons of surfactant and foamer per 1,000 gallons. The majority of the fracture treatments in the Suffield program used fresh water with three to five percent KCl added to prevent clay swelling. Carbon dioxide was normally added at 250 cubic feet per barrel to aid in the rapid cleanup of the fracture fluid. Sand used in the Suffield completion program utilized the following mesh sizes: 20-40; 10-20; 8-12 and 4-8. Concentrations of this sand, depending on the well and frac conditions, varied from 0.5 to 5 pounds per gallon of fluid pumped.

5. TREATMENTS

The Milk River zone was capable of taking all the programmed 30,000 pounds of frac sand with the exception of 10 wells which took slightly smaller amounts.

Stage fracturing was attempted on two wells using ball sealers. No ball action was indicated and no significant production increases resulted.

A two stage Milk River frac was conducted on the Alberta Suffield 6-12-18-7 well using a frac ball to separate the two sections. As a relatively high ratio of formation capacity after fracture to before fracture was determined for this well multiple

fracturing of the Milk River zone should be considered in future fracture programs.

Modifications to prevent clay swelling by the addition of chemicals to the fracture fluid were also attempted. Hydroxy Aluminum was used in the Alberta Suffield 6-10-20-7 well. Delta Fluid was used in the treatment of the Milk River on the 6-35-18-9 well. Results of using these fluid additives were not dramatic from a production point of view, but the improvement in calculated reservoir capacity from the flow data indicates potential for these additives. Future programs should seriously consider additional trial completions.

A review of well performance and a theoretical evaluation of fracturing indicated that sand from a source near Medicine Hat could be used as an alternate to imported sand in low deliverability zones such as the Milk River. Approximately 80,000 pounds of the sand was screened and dried for use in fracturing Alberta Suffield 6-33-16-7 and 6-11-17-6. Results indicate that this approach could have merit if combined with large grained imported sand for the final stages of the fracture treatment. Additional study of this possible method is also recommended for future work in the area.

The planned treatment of the Medicine Hat Zone involved 5,000# 20-40, 10,000# 10-20, 20,000# 8-12 and 15,000# 4-8 mesh sand. It was found that only 23 of the 46 Medicine Hat zones which were completed were capable of taking this amount. Average treatment was 45,000#. In general the treatments appeared to be routine.

Originally the completion program for the Second White Specks zones specified treatment after perforation prior to fracturing with 250 gallons of hydrochloric acid. Early in the program it was found that fractures were difficult to initiate for wells treated in this manner. Changing to 250 gallons of mud clean-up acid resulted in considerably improved fracture performances. With the exception of this problem, completion operations in the Second White Specks zone went as expected.

The Bow Island completion (6-10-18-4) and the Glauconite completions (6-19-18-8 and 11-16-20-8) were not stimulated.

6. DUAL COMPLETIONS

The majority of the well completions on the Block are dual zone. These dual zone completions utilized a fracture baffle and ball to segregate the zones during fracturing. General procedure for this operation was as follows:

a) Run the fracture baffle when running the casing setting the baffle approximately 50 feet above the lower zone to be completed.

b) Perforate the lower zone; either Medicine Hat or Second White Specks and fracture.

c) Drop fracture ball sealing off the lower zone - perforate upper zone and fracture.

d) Strip out fracturing equipment and blow well to atmosphere for 48 hours minimum to clean up well bore.

There were no occasions where the ball pushed through the fracture baffle while fracturing the upper zone. The ball was recovered in over 60 percent of the cases by merely blowing the well back to clean up. Where the ball was not recovered, a continuous tubing unit was used to circulate sand off the ball and then recovering it by blowing the well back. In some instances it was necessary to drill the ball up with a small bit on the end of the tubing string. In all cases, the ball was freed easily and the recovery operation accomplished relatively quickly.

Completion of the well following recovery of frac ball involved the running of a hookwall packer and tubing to an interval between the Milk River and Medicine Hat or Second White Specks zones, setting the packer in tension and alternately blowing the well and shutting it in to ensure as complete a recovery of frac fluids as possible. Following this cleanup phase, the well was shut in for pressure buildup and then tested.

7. GENERAL

Completion operations were significantly hampered and considerable additional costs of operation were incurred during the winter portion of the program. An exceptionally severe winter blocked snowplowed roads within hours of clearing. Since a fracture

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treatment involved the movement of some 300 tons of material and equipment, the expense incurred by delay, breakdowns and incomplete operations was significant. In addition, during the winter, the fracturing fluid had to be heated in advance of the actual fracture operation. In instances the fluid was heated for periods up to two days prior to actual use when equipment was delayed because of weather. In other cases when access was impossible the fluids had to be drained in order to prevent freezing and bursting of the storage tanks. On these occasions expensive fluid additives and water were lost. In order to maintain schedule and control costs, it was found necessary to increase the fracture crews and equipment during periods of good weather.

The summer program, or Stage 1, resulted in the completion of two single zone Milk River wells, five dual zone Milk River and Second White Specks wells and twenty dual Milk River and Medicine Hat wells. The Stage 2 program utilizing single and dual completion techniques provided 41 Milk River, 26 Medicine Hat and 24 Second White Specks zone completions. Single zone completions were performed on a Bow Island well and two Glauconite zone wells. Maps 1 and 2 show the well locations and intervals completed for each of the wells.

TESTING

Throughout the AOF testing discussions, the terms and nomenclature are those defined in the ERCB Report OGCB 65-10 dated July, 1965.

Testing of the wells was conducted over the period September, 1973 through June, 1974. The test procedure was as follows:

a) An initial eight hour buildup was taken prior to actual commencement of the test. Modified isochronal tests with one hour flow and shut-in periods were performed on the majority of the Second White Specks and Medicine Hat zones. Modified isochronal tests were also performed on selected Milk River zones. Other tests performed were all single point flow tests.

b) The extended rates or single point flows were programmed for a duration of 100 hours. Due to weather and terrain conditions, this was not always achieved.

c) The final buildup on each zone tested was programmed to extend for a period until the zone, in a 24 hour period, did not build greater than 5 psi. This segment of the test in the last six weeks of the testing program was a problem due to field conditions and the time element to complete the testing program.

During the nine month period that testing was carried out few well abnormalities were noted. The only major field problem

encountered was that of well access in the winter of 1973-74 caused by snow drifting and in the spring of 1974, by muddy roads and well sites.

The following procedures are recommended for future testing:

a) Stop-cock the well prior to testing to ensure the well is cleaned up after a stimulation.

b) To ensure a good initial shut-in measurement, monitor the well pressure twice during the 48 hour period, prior to commencing the test.

c) Run modified isochronals on every third or fourth well in a large development program to establish a slope pattern. Thirty minute flow and shut-in periods are sufficient to establish good slopes. The shorter flows and shut-ins will not interfere as quickly with the pressure transients of the reservoir, therefore eliminating erratic points.

d) The extended flow rate should be carried out for a duration, where the pressure drop is not greater than three psi per 24 hours and monitored for a minimum period of 60 hours.

e) Buildup should be monitored in detail for the initial four hours and the total buildup record should not be less than 120 hours.

PROGRAM COSTS

Major materials and services for the multi-well evaluation drilling program were acquired through competitive bidding. Comparison of costs achieved through this process compared to book prices for materials and for services indicated that significant savings were achieved for the program. Main areas of price reduction were those associated with the bulk purchase of materials and in the supply of services where continuing use could be made of men and equipment by co-ordinating activities during the multi-well program.

Throughout the program all contractor activities were supervised to ensure that the provisions of the bid were followed and that extra costs were held to a minimum. Cost control by wells was maintained and the cost for individual well problems or extra testing and evaluation are identifiable.

Cost additions, extra to those normally incurred in a conventional evaluation program, for this program, were incurred because of the nature of the access, and restrictions to operations present on the Block. Areas affecting costs included:

a) installing wellheads below ground in concrete cellars
b) operating in a 1,000 square mile area with only 97 miles of road
c) scheduling activities in the area with the most difficult terrain, during the winter, in order to avoid conflict with military activities

d) conducting a drilling program during one of the most severe winters experienced in the last several years

Review of the expenditures incurred indicates that the average evaluation well costs will be approximately:

	Summer	Winter
a) Medicine Hat	$33,000	43,000
b) Second White Specks	35,000	48,000
c) Bow Island	-	53,000
d) Basal Colorado	-	59,000
e) Mississippian	-	80,000

The extra cost of having the wellheads below ground is estimated at $3500. This extra cost includes the concrete rings and risers, costs associated with the extra time required to conduct portions of the completion operations below ground level, and the costs of removing the upper portion of the ring and burying the wellhead upon completion of the testing operations.

Without consideration of the above, the cost of a well in an evaluation program is noticeably higher, as compared to well costs that would be expected in a development program on the Block. Extra costs were incurred in the logging, zone segregation equipment, wellhead facilities for segregated dual completions, and extensive well testing necessary for the Evaluation Program. Average well costs to be expected in a development program could be 15 - 20% less than those of an evaluation program.

The increase in the cost of the average Medicine Hat test from the summer to the winter program of $10,000 dramatically illustrates the additional expenditures associated with drilling and completion operations in rugged terrain, serviced by few roads, during a severe winter. Main items where increased costs occurred are listed below:

a)	snow plowing	$ 2,300
b)	towing	1,000
c)	boiler - drilling rig	800
d)	water - hauling and heating	1,400
e)	turnkey and daywork	1,500
f)	fracturing	700
g)	service rig costs	1,000
h)	A.O.F. testing	800
i)	miscellaneous and supervision	500
	TOTAL	$10,000

With the above cost review in mind, the drilling recommendation that no development programs be scheduled during the winter, is strongly emphasized. Any economic advantage gained by earlier commencement of production is more than offset by the increased costs of conducting drilling and completion operations in this area during inclement weather.

APPENDIX 1

DRILLING, COMPLETION, TESTING PROGRAMS

1. TYPICAL DRILLING PROGRAMS

a) MILK RIVER - MEDICINE HAT ZONES (T.D. 1580 Feet)

1. Drill approximately 300 feet of 9 7/8" surface hole.
   Note: Minimum depth - may be deeper if warranted by surface gravel conditions.

2. Run 300 feet of 7", 17#, H-40 casing equipped with a guide shoe, float collar and one centralizer on the shoe joint. Thread-lok all shoe joint connections. Cement to surface with 100 sacks Oilwell Cement plus 3% Calcium Chloride.

3. Wait on cement six hours. Head up and pressure test casing and BOP to 1,000# prior to drilling out.

4. Drill ahead with 6 1/4" bit. Have KCl concentration in the mud system at 3% (by weight) before penetrating the Milk River Zone.

5. At total depth condition hole and run logs as directed.

6. Run 4 1/2", 9.5#, K-55 casing to total depth. Equip casing as follows:

   - Latch down baffle on top of first joint.
   - Frac baffle within 50 feet of the top of the lowest zone to be completed.
   - Centralizer and scratcher, held by a stop collar on the shoe joint, and every third joint to the top of the Milk River.
   - Cement to surface with 300 cubic feet of 1:1 Oilwell-Pozmix plus 2% gel plus 0.25% CFR-2.

7. Land casing in slips and release rig.

b) SECOND WHITE SPECKS ZONE (T.D. 2160 Feet)

1. Drill approximately 600 feet of 9 7/8" surface hole.

2. Run 600 feet of 7", 17#, H-40 casing equipped with a guide shoe, float collar, and centralizers on the first and third joints. Thread-lok all shoe joint connections. Cement to surface with 200 sacks of Oilwell Cement plus 3% Calcium Chloride.

3. Wait on cement six hours. Head up and pressure test casing and BOP to 1,000# prior to drilling out.

4. Drill ahead with 6 1/4" bit. Have KCl concentration in the mud system at 3% (by weight) prior to penetrating the Milk River Zone.

5. At total depth, condition hole and run logs as directed.

6. Run 4 1/2", 9.5#, K-55 casing to total depth. Equip casing as follows:

   - Latch down baffle on first joint.
   - Frac baffle within 50 feet of the top of the lowest zone to be completed.
   - One scratcher and centralizer on the shoe joint, and every third joint to the top of the Milk River Zone.
   - Cement casing to surface using 425 cubic feet of 1:1 Oilwell-Pozmix plus 2% gel plus 0.25% CFR-2.

7. Land casing in slips and release the rig.

c) BOW ISLAND ZONE (T.D. 2490 Feet)

1. Drill approximately 600 feet of 9 7/8" surface hole.

2. Run 600 feet of 7", 17#, H-40 casing equipped with a guide shoe, float collar, and a centralizer on the first and third joints. Thread-lok all shoe joint connections. Cement to surface with 200 sacks Oilwell Cement plus 3% Calcium Chloride.

3. Wait on cement six hours. Head up and pressure test casing and BOP to 1,000# prior to drilling out.

4. Drill ahead with 6 1/4" bit. Have KCl concentration in the mud system at 3% (by weight) before penetrating the Milk River Zone.

5. At total depth, condition hole and run logs as directed.

6. Run drill stem tests as directed.

7. Casing program will depend on the results of the log and drill stem test evaluation. Casing to be cemented to surface using the appropriate volume of 1:1 Oilwell-Pozmix plus 2% gel plus 0.25% CFR-2.

8. Land casing in slips and release rig.

2. TYPICAL COMPLETION PROGRAMS

a) MILK RIVER - MEDICINE HAT TESTS

1. Install well cellar to six feet below ground level. Cut off casing.

2. Run Gamma Neutron Log to total depth - in advance of completion.

3. Perforate Medicine Hat Sand with 2 jet shots per foot.

4. Frac Medicine Hat:

   - Dump 250 gallons 15% HCl while rigging up.
   - Frac with 50,000# sand in 3% KCl water as follows:

     5,000# 20-40 sand
     10,000# 10-20 sand
     20,000# 8-12 sand
     15,000# 4- 8 sand

     Add CO_2 to all water at 250 SCF/barrel. Use surfactant and foamer.
   - Operate to 4,000 psig maximum surface pressure and attempt to sand off with 4-8.
   - Fluid loss additive (20#/1,000 gallons).
   - Attempt to attain pump rate of 40 barrels per minute.
   - Maximize sand concentrations.

5. Drop ball to the baffle collar.

6. Perforate Milk River with one jet or bullet shot per foot, intervals to be selected on the basis of detailed log analysis. Treat a maximum of 10-20 perforations.

7. Frac the Milk River:

   - Frac with 30,000# sand in 3% KCl water as follows:

     5,000# 20-40 sand
     5,000# 10-20 sand
     10,000# 8-12 sand
     10,000# 4- 8 sand

     Add CO_2 to all water at 250 SCF/barrel. Use surfactant and foamer.

- Operate to 4,000# maximum surface pressure and attempt sand off with 4-8.
- Use fluid loss additive (20#/1,000 gallons).
- Attempt pump rates to 40 bbls/min.
- Maximize sand concentrations, keeping water volumes as low as possible.

8. Move out frac equipment immediately.

9. Blow back both zones to clean up for a minimum of 48 hours.

10. Shut in well, move in Service Rig.

11. Run retreivable packer on tubing single and set in casing.

12. Strip on tubing head setting on 4-1/2" belled nipple.

13. Release packer and run approximately 1,400' - 2 3/8" EUE tubing, reset packer.

14. Head up and release Service Rig.

15. Leave shut in for one week pressure buildup.

16. Record shut in pressures.

17. Test well.

18. Shut in well.

19. Place lid on cellar, backfill, place well marker.

20. Reclaim well site.

b) MILK RIVER - MEDICINE HAT - SECOND WHITE SPECKS TESTS

1. Install well cellar to six feet below ground level, cut off casing.

2. Run Gamma Neutron log to total depth - in advance of completion.

3. Perforate Second Specks with two jet shots per foot.

4. Frac Second Specks Sand:

   - Dump 250 gallons 15% HCl while rigging up.
   - Frac with 30,000# sand in 3% KCl water as follows:

     5,000# 20-40 sand
     10,000# 10-20 sand
     15,000# 8-12 sand

     Add CO_2 to all water at 250 SCF/barrel. Use surfactant and foamer.
   - Operate to 4,000 psig maximum surface pressure.
   - Use fluid loss additive (20#/1,000 gallons)
   - Attempt pump rates up to 40 barrels per minute.
   - Maximize sand concentrations.

5. Drop ball to the baffle collar.

6. Perforate Milk River with one jet or bullet per foot. Intervals to be selected on the basis of detailed log analysis. Treat a maximum of about 10-20 perforations.

7. Frac Milk River:

   - Frac with 30,000# sand in 3% KCl water as follows:

     5,000# 20-40 sand
     5,000# 10-20 sand
     10,000# 8-12 sand
     10,000# 4- 8 sand

     Add CO_2 to all water at 250 SCF/barrel. Use surfactant and foamer.
   - Operate to 4,000# maximum surface pressure and attempt sand off with 4-8.
   - Use fluid loss additives (20#/1,000 gallons)
   - Attempt pump rates to 40 bbls/min.
   - Maximize sand concentrations, keeping water volume as low as possible.

8. Move out frac equipment immediately.

9. Blow back both zones to clean up for a minimum of 48 hours.

10. Shut in well, move in Service Rig.

11. Run retreivable packer on tubing single and set in casing.

12. Strip on tubing head and screw on 4 1/2" belled nipple.

13. Release packer and run approximately 2,000' 2 3/8" EUE tubing, reset packer.

14. Head up and release Service Rig.

15. Leave shut in for one week pressure buildup.

16. Record shut in pressure.

17. Test well.

18. Shut in well.

19. Place lid on cellar, backfill, place well marker.

20. Reclaim well site.

3. TYPICAL A.O.F. TESTING PROGRAM

1) Following the frac job, flow the well to clean up. Ensure the flow rate is sufficient to unload liquids within the well bore (assuming this is within well capabilities). The well should be relatively clean within two or three days.

2) Following clean up, shut the well in to establish a high degree of pressure equalization in the area immediately surrounding the well bore. Sufficient time, must be allowed so that the closed-in formation pressure is no longer building up rapidly. (Less than 1/10 of one percent of the previously recorded pressure in 30 minutes).

3) In preparation for A.O.F. testing make certain a calibrated continuous wellhead pressure recorder is installed with a 24 hour rotation drive. The continuous recorder is to be utilized during the first 24 hours of the test. Dead weight readings will be taken once a day thereafter until completion of the test.

4) Prior to commencing Modified Isochronal A.O.F. test, record both casing (Milk River) and tubing (Medicine Hat or Second White Specks) shut-in wellhead pressures and temperatures.

5) Perform a modified isochronal test on the tubing utilizing one hour flow periods and one hour shut-in periods.

During this portion of the test both tubing and casing pressures should be recorded on a continuous chart for 24 hours in order to prove annular segregation.

6) Open the tubing on an extended rate with a draw down in the order of 30 percent and run for approximately 100 hours recording flows and pressures at least once per 24 hours.

7) Twenty-four hours after commencing the tubing modified isochronal test open the casing on an extended rate and run for approximately 100 hours as in Step (6).

8) Collect duplicate gas samples from specified wells at the end of the extended flow period.

9) Close in both tubing and casing monitoring pressure build up as follows:

0 - 4 hours	- 15 minute readings
4 - 8 hours	- 30 minute readings

After eight hours read once daily until well builds up less than 5 psig in 24 hours.

APPENDIX 2

TYPICAL BID REQUEST

REQUEST FOR PROPOSAL

SUPPLY OF CEMENT & CEMENTING SERVICES

SUFFIELD EVALUATION COMMITTEE

September, 1973

INTRODUCTION

The Suffield Evaluation Committee, acting under Alberta Regulation 134/73 being the Suffield Evaluation Regulations of the Province of Alberta, plans to drill seventy-seven reserve evaluation wells in the Suffield Block of Southeastern Alberta. The Committee will act as Operator in the planning, contracting, drilling and evaluating activities of the program. The Committee has appointed Last, Kloepfer Ltd., 525 Calgary House, Calgary, to act as its agent in the day to day conduct of these program activities.

The first stage of the drilling program began in July, 1973 and the 27 wells in this stage will be completed in August. The summer drilling is being conducted on areas of the Block not involved in active military training.

The second stage of the program will begin at the end of October, 1973 and the majority of the drilling is to be complete by late December. In this stage 50 wells are programmed for drilling and for completion and testing. Medicine Hat Tests number 27, with 8 Second White Specks and 15 deeper tests planned. The winter program will involve areas of the Block normally used for summer tank training.

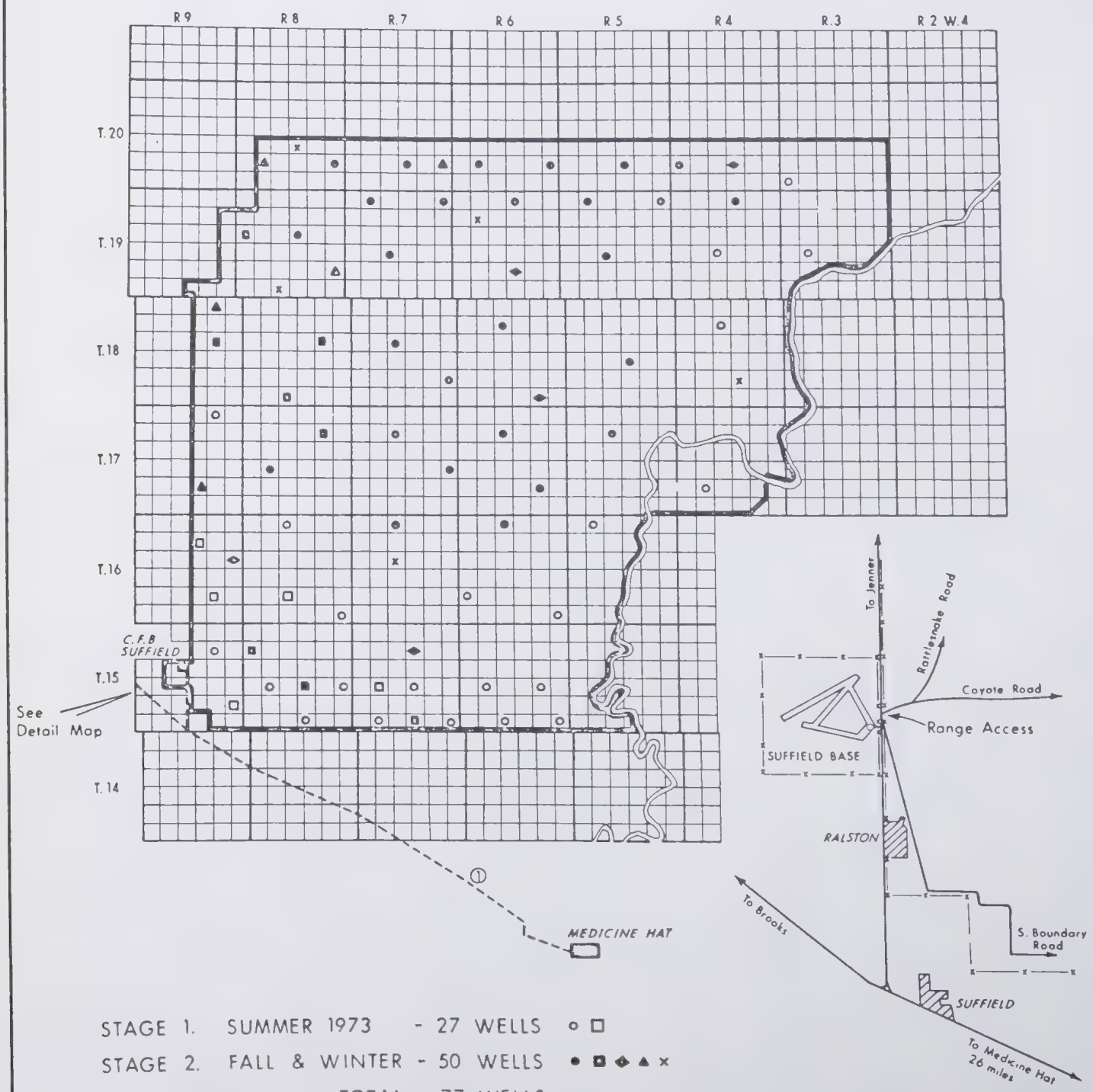
A conventional drilling and completion operation is contemplated, although wellheads will be set below ground level after the rig moves off.

Access to the Block will be through the Ralston-Suffield road from the Trans-Canada Highway. A temporary stocking point which will be a trucking, parking, and co-ordinating point as well, will be conveniently located in the area of the Suffield Base. The stocking point will be used for storage of all materials purchased by Operator. All suppliers of material, contractors and service companies, may be assured of unrestricted access for the conduct of their business.

For those contractors and suppliers requiring access to the wellsites, a detailed map of available road, trails or access routes will be available at the temporary stocking point at the Suffield Base when operations begin. Attachment I is a general map of the Suffield Block showing the approximate winter program well locations and the Block access point.

SUFFIELD BLOCK

PROPOSED RESERVES EVALUATION WELLS
&
BLOCK ACCESS



STAGE 1. SUMMER 1973 - 27 WELLS ○ □

STAGE 2. FALL & WINTER - 50 WELLS ● ■ ◆ ▲ ×

TOTAL - 77 WELLS

DETAIL MAP

ATTACHMENT I

BID

Bids are solicited for the supply of cement and cementing services for the surface casing and production casing for the fifty (50) well fall/winter 1973, drilling program for the Suffield Block.

The twenty seven Medicine Hat tests will utilize 300' of 7" surface casing, cemented to surface with 3% $CaCl_2$. The 4½" production string will be run to approximately 1,600' and will be cemented to surface with neat cement. The long string will be centralized across the Medicine Hat and Milk River Zones and no scratchers will be used.

The eight Second White Specks tests will use 600' of 7" surface casing, cemented to surface with 3% $Cacl_2$. The 4½" production string will be run to about 2,200' and will require cementing to surface with neat cement. Centralizers and scratchers will be used. Surface hole will be 9-3/4". Production casing will be cemented in 6-1/4" hole.

The fifteen tests deeper than the Second Specks may have casing run to total depth if zones of interest are logged and tested. Other than depth, conditions will be the same as for the Second Specks wells.

The use of a light weight slurry instead of neat cement for part of the long string job is a possibility. Contractor should be prepared to supply if called for:

- 1 part cement
- 2 parts pozzolan
- 8% gel
- required thinner
- mix at 12.5 # / gallon

Since this mix is a lower cost item per cubic foot of slurry, operator asks that the bid sheet reflect a price adjustment for the portion of this mix that replaces regular oilwell cement.

It is essential and a condition of this bid that the service company insure that cement and cementing equipment is on the well site in advance of the time that such service is required. In this regard service company will accept responsibility for following the progress of the two rigs planned for this program thereby insuring that cementing equipment is available when needed.

Call out of the cementing service company is the responsibility of the Drilling Contractor's tool pusher. Total time on location of 12 hours per job should be included in this bid. Waiting time in excess of twelve hours will be paid, and service company will quote its waiting time rate in the bid sheet.

Service company must quote on all of the cement and cementing requirements as detailed in the bid.

Service company is requested to provide evidence of adequate insurance coverage, which is to be appended to and made a part of its bid.

Contractor will be obliged to observe the Base's Range Regulations in the conduct of his work. Excerpts from the Regulations pertinent to such work are appended.

This tender is to be returned to Last, Kloepfer Ltd., 525 Calgary House, 550 - 6th Avenue S.W., Calgary, no later than 1:00 p.m. October 5, 1973. We expect the Suffield Evaluation Committee will award contract for supply of cement and cementing service shortly thereafter. The drilling program will begin about mid October, 1973 and should complete by December 25, 1973.

RESERVES EVALUATION PROGRAM-SUFFIELD BLOCK

SUPPLY OF CEMENT & CEMENTING SERVICE

Tender of: _____
(Name)

_____
(Address)

For the supply of cement and cementing service for surface casing and production string for the fifty (50) well fall/ winter 1973 drilling program, Suffield Block.

To: The Suffield Evaluation Committee
c/o Last, Kloepfer Ltd.
525 Calgary House
550 - 6th Avenue S.W.
Calgary, Alberta

Attn: Mr. G. J. Last

The undersigned, being familiar with casing cementing practices in the Suffield Area, and having examined the cement and cementing requirements contained herein, agrees to supply such cement and cementing services in accordance with the requirements of this bid tender and at prices as set out in the following page of this tender.

_____
Signature

BID SHEET*

	Price
Cementing to surface of approximately 300' of 7" surface casing in 9-3/4" hole including supply of required neat oil well cement plus 3% $CaCl_2$ (design 30% excess - approximately 100 sacks)	_____
Cementing to surface of approximately 600' of 7" surface casing in 9-3/4" hole including supply of required neat oil well cement plus 3% $CaCl_2$ (design 30% excess - approximately 200 sacks)	_____
Cementing to surface of approximately 1,600' of 4½" production casing in 6-1/4" hole including supply of required neat oil well cement (design 300 cu. feet slurry)	_____
Cementing to surface of approximately 2,200' of 4½" production casing in 6-1/4" hole including supply of required neat oil well cement (design 425 cu. feet slurry)	_____
Cementing to surface of approximately 3,500' of 4½" production casing in 6-1/4" hole including supply of required neat oil well cement (design 675 cu. feet of slurry)	_____
Waiting time in excess of 12 hours total job time, price per hour	_____
Price reduction, pozzolan cement option, per cu. ft. slurry	_____

_____
Signature

*Note: All prices to be quoted for bulk cement.

APPENDIX 3

STAGE I PRESSURE ABNORMALITIES

REPORTED TO ERCB

July 20, 1973 - Well 6-15-15-7

At total depth of 1325 feet, crew pulled out and rigged to log. Well kicked. Closed BOP, bled off gas, and water. Stripped D.P. back in hole. Mixed mud and weighted to 9.6#/gal. Circulated free of gas. Completed logging.

August 2, 1973 - Well 6-1-16-6

At total depth of 1416 feet, crew started to pull out to log. Three stands (joints) off bottom, dropped drill pipe. Fished by screwing back into box. Bit plugged. Swabbed well in pulling plugged bit. Well kicked. Closed BOP and stripped back to bottom. Circulated hole free of gas - mud weight 9.5#/gal. Completed hole.

August 13, 1973 - Well 6-16-19-4

At total depth of 1486 feet crew pulled out to log. At the collars the well kicked. Stripped back to bottom. Mixed mud and weight material. Raise mud weight to 10.2#/gal. Circulated hole free of gas. Completed logging program.

August 20, 1973 - Well 6-1-15-6

At total depth of 1388 feet, crew pulled out to log. Mud weight was 9.8#/gal. because gas had been noticed previously. Ran Schlumberger Induction Log. During log well kicked. Finished logging. Ran in with drill pipe (well gassing quietly), circulated hole free of gas and completed logging.

D I S C U S S I O N

EVALUATION

The objective of this portion of the Evaluation Drilling Program was a definition of hydrocarbon potential down to the Paleozoic erosional surface.

Of necessity, the evaluation of hydrocarbon reserves contained in the Resource Evaluation Study of the Suffield Block dated December, 1972 was entirely interpretative and based on the extension into the Block of geological and reservoir engineering interpretations and trends obtained from subsurface control peripheral to the Block. The current evaluation is concerned almost entirely with Block subsurface data, peripheral control being utilized only to the extent that the interpretation is correctly tied with regional trends.

The results of this evaluation are presented in the following geological and engineering discussion. All pertinent well data is presented by zones on individual well data sheets. For purposes of clarity, control data has not been posted to the individual maps.

GEOLOGY

1. STRATIGRAPHY AND STRUCTURE

The stratigraphic column for the Suffield Block includes sediments ranging in age from Pleistocene through Cambrian, (Figure 2). Post-Paleozoic sediments, largely Cretaceous in

age, are approximately 3,000 feet thick and are the main subject of this evaluation, (Figures 2 & 4). This interval includes the major gas producing reservoirs in the regional area. Stratigraphic relationships of these various Cretaceous reservoirs are shown in the accompanying cross-sections (Figures 5, 6 & 7). With the exception of the continental Upper Mannville, these sediments consist of marine sandstones and shales.

The sands, where well developed, offer fair to excellent reservoir potential. Depositional strike is northwest. During most of the depositional history of the Cretaceous, the basinal edge was to the southwest.

The Suffield Block is situated on the crest of the northeast plunging Bow Island Arch. Structural movement in the area of the Arch appears to have begun as early as late Upper Jurassic and probably continued on a minor and intermittent basis through to Tertiary time. At some time during the Tertiary a major rejuvenation of the Arch occurred. Because of the long established history of positive structural movement, the Arch has served as an important focal point for hydrocarbon accumulation.

For more detailed discussion of stratigraphy and structure, reference is made to the report, "A Resource Evaluation, Suffield Block", December, 1972.

2. HYDROCARBON POTENTIAL

As was forecast in the December, 1972 study, the Block contains major gas reserves. These reserves are found largely in the Upper Cretaceous Milk River, Medicine Hat and Second White Specks sandstones. Smaller gas reserves have been established, or will likely be encountered, in the Lower Cretaceous Bow Island, Basal Colorado, Glauconitic and Sunburst/Cutbank sandstones. The possibility of oil production from the Glauconitic has been indicated.

Since the deepest test wells in the evaluation program were drilled only to the Paleozoic erosional surface, hydrocarbon potential of Paleozoic sediments within the Block is still an unknown quantity.

UPPER CRETACEOUS

Milk River Formation

Within the Suffield Block the Milk River formation is approximately 300 feet thick and consists of shale with multiple thin interbeds and laminae of sandstone and siltstone. While individual silts and sands are probably of small areal extent, the total interval maintains relatively constant characteristics over regional areas (Figures 5 & 6). Porosities and permeabilities are low and reservoir quality is below average.

The Milk River is a major gas reservoir, both regionally and within the Suffield Block. It is unlikely that there has been long distance migration of gas in the Milk River. Fracturing and faulting associated with the Bow Island Arch has probably enhanced reservoir characteristics in local areas by establishing

better vertical communication between individual sands and silts. Even so, because of the relative lack of permeability, delivery rates from the Milk River are low in comparison with other sandstone reservoirs, and a greater density of drilling is required for proper drainage.

An interpretation based on mechanical logs of the gas potential of the Milk River in a single well bore is often difficult to relate to adjacent well bores. While SP curve deflections are generally present, they are small and variable and are not a valid mapping parameter. The Gamma Ray curve, is useful for identifying sand and silt laminae, but it is impossible to relate actual values to the beds yielding the better gas flows.

It is considered that the best single parameter for mapping gas potential is resistivity. This is based on the premise that higher resistivities in the Milk River are at least partially indicative of the presence of sand and hydrocarbons. As such, an interpretation based on a "Feet of Resistivity Isopach" is regarded as a semi-qualitative analysis of gas potential. Combining resistivity mapping with all other available parameters yields a valid interpretation of the reservoir.

For the initial Milk River study presented in the December, 1972 report, the resistivity curve chosen was the 16 inch normal curve. The cutoff was established as 10 ohm-meters. While recognizing that the 16 inch normal curve is a shallow investigation device with readings affected by conditions within and

adjacent to the well bore, it was chosen over the 64 inch deeper investigation curve because of the difficulty in reading low resistivity values on the 50 or 100 ohm-meter scale used in many of the older logs. It was also believed that the long spacing of the induction curve does not provide sufficient delineation of the thin sand/shale sequences of the Milk River.

The logging program for the Stage 1 evaluation wells was designed to use the Spherically Focused Induction- Induction logging suite for conductivity (resistivity) determinations. The spherically focused device has a short spacing similar to the 16 inch short normal spacing of the more conventional Induction-Electric suite. The characteristics of the SFI tool permits good bed definition with the resistivity measurement not materially affected by bore hole conditions. The SFI logging tool is quite sensitive and required considerable field adjustment prior to and during each run. Somewhat longer logging times were therefore required to ensure adequate log quality control. The Induction measurement was the normal 64 inch conductivity measurement device. All logs were recorded in digital form.

Figure 8 is a plot of resistivity response determined from Stage 1 wells logged with the SFI tool configuration. The SFI resistivity determination and the Induction values are essentially identical. The conventional Induction-Electric tool was therefore adopted for the last part of the program to facilitate the field operations since interpretation using the Induction determined resistivity provided results equivalent to those of the SFI tool.

Also present on Figure 8 is the average response of the 16 inch short normal spacing of the electric log compared to the 64 inch induction log reading for wells logged with the Induction-Electric log combination. The data indicates that the 16 inch normal is severely influenced by bore hole conditions and mud filtrate resistivity. The 16 inch measurement was therefore not used for mapping as the data is not representative of actual formation resistivity.

The logging program utilized provided the required data for a computer processed interpretation of reservoir characteristics. The computer analysis technique quantifies formational characteristics such as the percentage of clay and quartz as well as porosity, permeability, and hydrocarbon content. Calculation accuracy is dependent upon both hole condition and log quality. Poor hole conditions due to mud cake or caving renders the analysis of the FDC and SNP logs invalid. Log quality is also critical to any of the data. All resistivity logs were cross checked and there were only six wells where the measurements were in error by one or more ohm-meters in the 10 ohm-meter range. For the Suffield Evaluation Program, computed log interpretations were considered representative for approximately half the wells. Net pay, porosity and water saturation for those wells for which the computed analysis is considered valid are shown on the individual zone data sheets.

The Milk River formation has been subdivided into four zones, (Figures 4, 5 & 6). This subdivision is based on a network of

stratigraphic cross-sections and is valid across the entire Block. The breakdown was considered necessary as it became evident that, within a given well bore, the Milk River contained productive and non-productive intervals. A detailed stratigraphic analysis indicated that gas potential is largely confined to the four zones herein selected. When the Milk River is considered as a series of individual reservoirs, separated by non-productive intervals, rather than a homogeneous unit, the identification of gas reserves is more accurate. Furthermore, using this approach, an ongoing exploitation or exploration drilling program will be able to anticipate the more productive portions of the reservoir, both by area and by zone.

A semi-qualitative assessment of the gas potential of the total Milk River formation is presented in Map 4, "Milk River Resistivity Isopach, (Higher than 10 ohm-meters - Induction Curve)". An identical presentation is made in Maps 5 and 10 with the Milk River being sub-divided into two zones. These three maps show the number of feet of resistivity above a 10 ohm-meter cutoff on the induction curve. They are presented so as to relate the current study to the initial study of December, 1972 which was based on a 10 ohm-meter cutoff on the 16 inch normal curve.

Analysis of gas potential for the current study is presented semi-qualitatively in the four-fold zonal breakdown illustrated in Figure 4 and Maps 6, 8, 11 and 13. The mapping parameter in this instance is the number of feet of resistivity from the in-

duction curve using a cutoff of 12 ohm-meters. These zones were also mapped on the basis of a 10 and a 14 ohm-meter cutoff. However, comparison of results of the three cutoffs with net pays as determined by the computed values, together with production tests, indicates that the 12 ohm-meter cutoff most closely approximates a net pay relationship across the Suffield Block, (Figure 9). The relationship between 10 and 12 ohm-meter cutoffs is shown in Figure 10. The relationship of resistivity measured characteristics as compared to computed net pays from logs for each of the four sub-zones is shown in Figure 11.

Individual net pay interpretations are presented for the four-fold subdivision in Maps 7, 9, 12 and 14. The net pays are based on a consideration of the resistivity isopachs, log data and production tests. It is from these maps that Milk River gas reserves have been calculated.

Water saturation in the Milk River was also mapped. There is close coincidence between areas of thicker pay for each zone with areas of lower water saturation. Water saturations range from 55% in better developed to over 70% in poorer reservoir areas. Porosities were also mapped but no coincidence was noted with net pay or water saturation.

More than 90% of the Block is indicated to be productive of gas from the Milk River zone.

Medicine Hat Sandstone, Upper Colorado Group

The Upper Colorado Group comprises all strata between the First White Specks Marker and the Base of Fish Scales Marker, (Figures 2 & 4). Within the Suffield Block this interval has an average thickness of 700 feet.

Medicine Hat sandstones, as herein discussed, occur in the upper 225 feet of the Upper Colorado Group. The Medicine Hat sandstone, as usually defined, is situated 100 feet below the top of the Upper Colorado. For the purpose of this report, this sand is designated the Medicine Hat A Sandstone.

On the northern and eastern sides of the Suffield Block the Medicine Hat A consists of up to 40 feet of fine to medium grained sandstone with shale interbeds, (Atlee/Buffalo and Medicine Hat gas pools).

This sand development in the Medicine Hat A is not present over the southwesterly one-third of the Block. Present instead, as an approximate stratigraphic equivalent, is a 50 foot interval of shale with thinly bedded to laminated, fine grained silts and sands that have poorly developed porosities and permeabilities. In a gross sense this section closely resembles portions of the overlying Milk River, (Figures 5 & 6).

Distribution of the Medicine Hat A sand is shown in Map 15. This map indicates net pay and areal distribution of the Medicine Hat A sand as developed in the Atlee/Buffalo and Medicine Hat pools. Net pays have been derived from a combination of resistivity and porosity logs as well as computed log interpretations where valid, (Figure 17).

An interpretation of the poorly developed equivalent to the Medicine Hat A Atlee/Buffalo - Medicine Hat reservoir is presented in Maps 16 and 17. This interval has been examined in a manner identical with the approach used for the overlying Milk River, which it closely resembles. Map 16 is a resistivity Isopach using a 12 ohm-meter cutoff. As is evident, there are three separate resistivity thicks, herein termed the Alderson, Princess and Jenner pools. Map 17 is a Net Pay Isopach for these pools. Net pay data were derived from a combination of resistivity and porosity logs together with computed log data where valid. Where such data was not considered reliable, estimations of pay were made on the basis of comparison with the resistivity isopach.

Approximately 100 feet below the Medicine Hat A is a thin sand lithologically similar to the Atlee/Buffalo - Medicine Hat reservoir (Figures 5 & 6). This unit is herein referred to as the Medicine Hat B sandstone. It is developed only in the southeasterly portion of the Block. Net pay and distribution is shown in Map 18. This sand rarely exceeds 15 feet in thickness. Net pay data were derived from a combination of resistivity and porosity logs together with computed log data where valid.

It is considered that the Atlee/Buffalo - Medicine Hat A reservoir, (Map 15) with relatively high porosity and permeability, contains gas that has migrated over distance. However, that portion of the Medicine Hat A containing the Alderson, Princess and Jenner pools (Maps 16 & 17), holds gas that is

thought to be basically non-migratory, having accumulated from enveloping marine shales. In both cases, vertical fracturing and faulting associated with the Bow Island Arch has probably enhanced reservoir characteristics.

Approximately 75% of the Suffield Block is interpreted as being gas productive in either or both the Medicine Hat A and B sandstones.

Second White Specks Sandstone, Upper Colorado Group

The Second White Specks sandstone is situated 200 to 250 feet above the Base of Fish Scales Marker,(Figures 4, 5 & 6). The sand is interpreted as a series of marine offshore bars with a maximum thickness of 20 feet. The sands may be narrow and elongate to nearly blanket in nature. Where well winnowed and clean, reservoir quality is fair to excellent.

Areal distribution and net pay of the Second White Specks sandstone within the Suffield Block is presented in Map 19. Two separate sand bodies are identified. Reservoir parameters differ. Net pay data has been derived from a combination of resistivity, gamma ray and bulk density data as well as consideration of the SP curve.

The Alderson pool, in the extreme southwest corner of the Block has net pays up to a maximum of eight feet. Deliverability ranges up to 1 MMCF/day. This sand is well developed with good porosity and permeability. The Princess pool, northeast of the Alderson pool, is a thinner reservoir with net pays ranging to a maximum of six feet. Porosity and permeability is less well

developed. Productive capacity ranges from negligible to a maximum of 250 MCF/day.

Local structure does not appear to affect gas distribution within these reservoirs. To this stage, free formation water is not apparent.

Approximately 50% of the area of the Suffield Block is interpreted to contain Second White Specks gas reserves.

LOWER CRETACEOUS

Bow Island Formation, Lower Colorado Group

The Bow Island formation within the Suffield Block may consist of up to four or five separate sand bodies in a 200 foot interval of interbedded marine sands and shales, (Figures 2, 4 & 7). Bow Island sandstones are marine offshore bar deposits, are fine to medium grained, well sorted and have good to excellent porosities and permeabilities. Where well developed, these sands are excellent reservoirs.

In the general area most Bow Island gas reserves occur in the upper thirty feet of the formation, (Figure 7). Accumulation may occur in porous blanket sands purely as a result of structural closure, or alternately, where the southerly, updip edge of a bar crosses local structure. In either case, positive structural elements are important for accumulation.

Map 21, "First Bow Island Sandstone, Productive and Prospective Areas", shows interpreted net pay for the only productive area of Bow Island discovered to date in the Suffield Evaluation Drilling Program. Several other potentially pros-

pective areas, based on the coincidence of porous sand and positive structure, are also indicated. One such area, located in Township 15, Range 5, W4M, has an associated gas shown in the Bow Island outside the Block in the well in Lsd. 6-2-15-5 W4M.

Twenty sections of Bow Island gas reserves have been interpreted for the Suffield Block by the present evaluation program. Based on the current interpretation, it is possible that the Block will prove to contain reserves over several multiples of the area presently considered productive.

Basal Colorado Sandstone, Lower Colorado Group

The Basal Colorado is a thin marine sand occurring at the base of the Lower Colorado Group, (Figures 2, 4 & 7). It is considered to be an on-lap deposit of an advancing Lower Colorado sea. Where the sand is well developed, porosity and permeability are good and reservoir quality varies from fair to excellent.

Regional dip at the stratigraphic level of the Basal Colorado is generally northward. As with the overlying Bow Island, hydrocarbon accumulation occurs where a southerly up-dip edge of porous sand crosses local structure, or alternately, where porosity is coincident with structural closure. Free formation water is usually present down-dip.

Map 22, "Basal Colorado Sandstone, Net Porosity Isopach, Showing Prospective Areas", indicates several areas within the Block which are thought to offer potential for Basal Colorado gas. To date, production has not been encountered.

Glauconitic Sandstone, Mannville Group

The Glauconitic is a marine sand at the base of the non-marine Upper Mannville. It is underlain by the marine Ostracod Shale and the Sunburst/Cutbank sandstones of the Lower Mannville. There is a tendency for better sand development to occur over the crest of, or peripheral to, prominent paleotopgraphic highs on the underlying Paleozoic erosional surface.

Within the Suffield Block the Glauconitic is everywhere present, except for the eastern side where deposition did not occur due to exceptionally high paleotopography, (Maps 23 & 24).

Within the Block both oil and gas have been encountered in this unit. Map 23, "Glauconitic Sandstone, Productive and Prospective Areas", indicates some 20 sections of interpreted gas pay considered to be associated with 24 feet of net gas pay encountered in the Glauconitic in the well, Lsd. 6-19-18-8 W4M. This well has an A.O.F. of 60 MMCF/day.

Glauconitic oil was indicated in the well in Lsd. 11-16-20-8 W4M, a near offset to a Glauconitic oil pool of the Jenner Field. Because of hole trouble, a complete suite of logs was not obtained for this well bore. However, by samples and gamma ray curve, it is considered that 60 gross feet of Glauconitic sandstone are present at this location. Samples suggest that the upper 40 feet are saturated with heavy oil. The sand was tested through casing and recovered only fresh water. It is considered that the fresh water results from a water injection program undertaken to maintain pressure in Jenner pool. It is possible that this well bore would have proved productive of oil if the reser-

voir had been encountered in a virgin state.

Map 23 shows additional areas, based on the coincidence of porosity and structure, which are considered to offer potential for hydrocarbons in the Glauconitic. On a statistical basis, drilling to date, with the discovery of hydrocarbons in two out of six tests penetrating the section, suggests that further opportunity exists within the Block for Glauconitic reserves.

POTENTIAL AREAS

A composite map has been prepared indicating the number of prospective Milk River zones at any particular locality, based on the four-fold zonal breakdown (Map 25). As is evident, the Milk River formation is interpreted as being productive over the majority of the Suffield Block, with the exception of a small area on the northern boundary. In general, the southwesterly portion of the Block contains more potentially productive zones.

Map 26 combines the number of individual prospective zones anticipated at any locality within the Suffield Block for that portion of the stratigraphic section from surface to the Paleozoic erosional surface. In compiling this date, the four zones of the Milk River have been considered as one productive zone so as to simplify the presentation.

3. POSSIBLE ADDITIONAL RESERVOIRS

Basal Foremost Sandstones

Within the regional area, several small Basal Foremost gas pools have been discovered. These sands, where well developed, exhibit fair to excellent porosity and permeability.

In the Suffield Block, the Basal Foremost is encountered at depths between 500 and 800 feet. Resistivities of a value sufficient to suggest the possible presence of hydrocarbons have been noted in several wells in the current evaluation program. While such resistivities may also be indicative of fresh water, perforation tests of one or two of the more attractive appearing sands could be undertaken.

As development drilling is carried on within the Block it is likely that small reserves of Basal Foremost gas will be encountered.

Medicine Hat Zone

As defined in the initial report on the Suffield Block in December, 1972, the "Medicine Hat Zone" included all strata from the top of the Colorado to the top of the Second White Specks. It was felt at that time that, since portions of this zone had resistivities and lithologic characteristics resembling productive sections of the overlying Milk River, there was the possibility of "Milk River type" gas production from such intervals. Evaluation drilling during the current program has proved this

premise to be correct with gas being produced from such sediments at the approximate stratigraphic level of the Medicine Hat A sandstone in the pools herein defined as Alderson, Princess and Jenner, (Maps 16 & 17). Further, gas production has also been obtained from the "Medicine Hat Zone" in the sand defined in this report as the Medicine Hat B Sandstone, Medicine Hat Pool (Map 18).

It is considered possible that, on further analysis and testing, additional gas productive intervals may well be encountered within what was termed the "Medicine Hat Zone".

Second White Specks Zone

As defined in the December, 1972 report, the "Second White Specks Zone" included all strata between the top of the Second White Specks sandstone and the Base of Fish Scales Marker. As with the overlying "Medicine Hat Zone", this zone contained intervals with resistivities and lithologies resembling gas productive sections of the Milk River. The possibility of "Milk River type" gas production was suggested.

The Evaluation Program did not test this possibility. A perforation test through casing of one of the more attractive intervals within the zone is suggested.

Sunburst and Cutbank Sandstones

This sequence of sandstones of the Lower Mannville is largely continental in origin and overlies the Paleozoic erosional surface. Both gas and oil production has been obtained in the regional area.

While production has not as yet been encountered within the Suffield Block, additional drilling may establish reserves.

Paleozoic Surface-Basement

Evaluation drilling to present date has not been carried deeper than the Paleozoic surface.

Thickness of the stratigraphic section between the Paleozoic erosional surface and the Pre-Cambrian is approximately 4,000 feet. Sediments of Mississippian, Devonian and Cambrian age occur within the interval. Such sediments are largely marine carbonates and shale. Regionally, some of these carbonates have well developed porosity and offer reservoir potential if encountered under proper trapping conditions.

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ENGINEERING

The reservoir rock and fluid properties for the various pools were obtained from well logs, cores, drill stem tests, and fluid sample information obtained during the Evaluation Drilling Program. Productivity of the wells was based on AOF testing. The shut-in pressure recorded prior to the AOF tests and the buildup data obtained subsequent to this testing was used to establish initial reservoir pressure, to calculate reservoir flow conditions, and to evaluate the effectiveness of the fracture treatments.

Porosity and water saturation values for the Upper Cretaceous pools (Milk River, Medicine Hat and Second White Specks) were interpreted from the computed log sections. Only those porosity and water saturation values corresponding to the net pay intervals as discussed in the geological appraisal were considered as representative.

Porosity values for the Milk River were based upon both the log derived values and upon cores obtained from twelve wells. Figure 12 is a plot of porosity obtained from core analysis and that calculated from logs for equivalent intervals. Although considerable scatter in the data exists, an average porosity of approximately 13.5% is obtained utilizing either porosity data source. The numerical average of either set of porosity data is approximately 13.5%. Based upon these comparisons it was judged that the porosity values calculated from the basic well logs are representative for the three Upper Cretaceous zones.

The Lower Cretaceous (Bow Island and Glauconitic) porosity and water saturation values were established using conventional well log analysis methods for the wells completed in these zones.

Theoretical calculations indicated that up to six months of extended flow would be required to ensure stabilized flow conditions for the Milk River, Medicine Hat and Second White Specks pools. Accordingly the Modified Isochronal Method of testing and interpretation was adopted for this program. Minimum extended flow periods of 100 hours were specified and flow periods of up to 600 hours were conducted to evaluate the change in calculated Absolute Open Flow with extended flow time.

The pressure buildup data recorded for periods up to six months after the AOF tests indicated that the methods used for extrapolating pressures were generally valid providing the build-up pressure history is in excess of 72 hours.

Based upon the modified isochronal test extended flows and pressure buildup analysis, the Milk River, Medicine Hat and Second White Specks wells can be generally categorized as low pressure, low deliverability gas wells. The Bow Island and Glauconite completions and AOF tests indicate that their productivity can be considered as normal for the depth and pressures of the reservoir.

1. RESERVOIR PROPERTIES

UPPER CRETACEOUS

Milk River Formation

The average reservoir properties for each of the four zones identified in the Milk River formation are set out on Table 3. The characteristics for the Milk River formation represent a volumetric weighting of the individual zone properties.

The manner in which net pays for the Milk River zone were established is described in the preceding geological discussion. The porosity values for the net pay of each Milk River zone were mapped, however, no coincidence with the net pay map was observed. Average porosity values from these maps were determined for each zone. The volumetrically weighted average porosity was then used in the determination of reserves.

Water saturation for the net pay derived from logs was also mapped. There is close coincidence between areas of thicker pay for each zone with areas of lower water saturation. Water saturations range from 55% in better developed to over 70% in poor reservoir areas. Average water saturation was determined for each zone from this map. Again the volumetrically weighted average water saturation was used in the determination of the gas in place.

Gas compressibility (Figure 13) was calculated from gas samples obtained during well testing. Reservoir temperature is estimated at $60^{o}F$.

Pressure information was based primarily upon buildup data from the well tests. The average initial pressure for the Milk River zone was determined to be 475 psia at a datum depth of 1300 feet sea level. Based upon the areal analysis of pressure distribution, no drainage from the Milk River by offsetting production can be interpreted at this time.

Medicine Hat Formation

The reservoir properties for the Medicine Hat pools are detailed on Table 4. The average net pay values indicated are the volumetrically weighted thickness values. The porosity of 13.5% and water saturation of 57.5% are the numerical average values interpreted from logs. The distribution of the data considered valid did not permit a more detailed breakdown of the porosity and water saturation values between pools or within a pool. Reservoir temperature is estimated at $62^{o}F$ for all pools.

Medicine Hat reservoir pressure was determined by monitoring long term pressure buildup after the Absolute Open Flow Tests. The initial pressure in all pools is indicated to be 640 psia. Within the Atlee/Buffalo area (Map 15) the current reservoir pressure in the pool area north of Township 18 is 610 psi indicating drainage of five percent of the initial gas in place for these townships. Drainage to the end of 1973 is therefore indicated at about 5 BCF as a result of production from Atlee/Buffalo field. No other serious drainage can be interpreted for the Medicine Hat Pools of the Block.

Second White Specks Formation

Table 5 is a summary of the reservoir properties for the Second White Specks pools. Porosity and water saturation values are quite uniform over the two pools with average porosity values of 15% and an average water saturation of 57.5%. The areal analysis of the initial pressures (840 psi) for the two pools indicates that drainage has not occurred due to offsetting development.

LOWER CRETACEOUS

Bow Island and Glauconite

The average reservoir properties of the Bow Island and Glauconite zones were determined from the individual well bore characteristics of the wells. The AOF tests were used to determine the pressure and temperature characteristics of the pools. The resulting data is summarized on Table 6.

2. ABSOLUTE OPEN FLOW TEST RESULTS

UPPER CRETACEOUS

Milk River Formation

The 100 hour AOF for each isochronal test was plotted against the wells' calculated net pay. No allowance was made for unperforated zones nor for non-contributing but perforated zones. The general relationship resulting is shown on Figure 14. It is believed that this is a minimum relationship and that more favorable rates can be achieved provided multiple fracture treatments are conducted in the thicker multi-zone Milk River areas.

Figure 15 is a plot of average change in AOF calculated during extended flow testing. It is indicated from this plot that for practical purposes, stabilized conditions exist after 500 hours of extended flow. Figure 16 is the resulting relationship of stabilized flow as a function of hours on extended flow. From this plot it is indicated that the AOF determined from the isochronal tests is approximately 3.6 times that to be expected from the well under stabilized flow conditions. Similarly the stabilized AOF flow rate will be approximately 82% of the 100 hour AOF.

Pressure buildup analysis provides an insight as to the effectiveness of the fracture treatment. Figure 23 is a plot of reservoir capacity of the fractured well as compared to the indicated capacity of the unfractured well. From this plot it is indicated that an average improved well condition of three exists for the Milk River due to the fracture treatment. This level is consistent with the theoretical improvement calculated for such treatments.

Table 7 is a list of wells completed and tested in the Milk River Formation and their calculated stabilized AOF. Wells with stabilized AOF values of less than 50 MCFD are generally completed in areas interpreted having essentially zero net pay in the Milk River. Production from such wells would have to be commingled with lower zone production if the indicated reserves are to be produced. The average stabilized AOF from the tested wells is 180 MCFD. The average stabilized AOF for wells exhibiting an AOF greater than 50 MCFD is 220 MCFD.

Medicine Hat Formation

The 100 hour AOF, net pay relationship for the Medicine Hat pools is indicated on Figure 18. It is readily apparent that the three pools located in the westerly portion of the Block have decidedly poorer production characteristics than does that area offsetting the Atlee/Buffalo - Medicine Hat pool. Figures 20 and 21 show the relationship of extended flow determined AOF to both the isochronal and stabilized well AOF. The wells completed in the Medicine Hat and their indicated stabilized AOF are shown in Table 9. For the Atlee/Buffalo - Medicine Hat Pool the average stabilized AOF is 375 MCFD. The average stabilized AOF for the three western pools (Alderson - 81 MCFD; Jenner- 69 MCFD; and Princess- 92 MCFD) indicate that these pools would be uneconomic to develop as individual entities and this production would have to be produced in association with either the Milk River or Second White Specks production.

The improvement in well productivity for Medicine Hat wells through fracturing is shown on Figure 24.

Second White Specks Formation

The Alderson and Princess Second White Specks pools' 100 hour AOF, net pay relationship is shown on Figure 19. The Alderson pool average productivity is approximately six times that of the Princess pool per foot of indicated net pay. Table 9 lists the wells completed in the two Second White Specks pools and their calculated stabilized AOF potentials. The stabilized AOF values for Princess pool are not sufficiently high to justify development

of the pool as a separate production operation.

LOWER CRETACEOUS

Bow Island Formation

The stabilized AOF calculated for the 6-10-18-4 well completed in the Bow Island is 1,320 MCFD. Stabilized conditions were achieved during the 48 hour extended flow period. The test and interpretation were routine. The AOF determined is considered to represent the deliverability of this well. Should a well be completed in a thicker Bow Island section, the AOF would be expected to be correspondingly higher.

Glauconite

The 60 MMCFD AOF test for the Glauconite zone in the well 6-19-18-8 is considered a classic test. The interpreted flow and pressure calculations were routine.

3. RECOVERABLE GAS

The abandonment rate per well occurs when income from the gas equals the operating cost of the well and facilities. After making allowance for fuel the abandonment rate can be approximated by forecasting the net income after royalty and equating this value to the operating expense. At time of abandonment the abandonment rate is estimated to be on the order of 20 MCFD per well for Milk River, Medicine Hat and Second White Specks type production.

Determination of the corresponding abandonment pressure sets the ultimate recovery level. The abandonment pressure may be determined from the relationship.

$$Q_{aband} = c(P_f^2 - P_s^2)\, n$$

The values of c and n are available from the AOF tests of the wells. Assuming the flowing pressure (P_s) at abandonment will be about 30 psia to provide for pressure losses in the well and gathering system, the reservoir pressure (P_f) can then be determined. Figure 22 is a plot of raw gas recovery as a function of initial stabilized AOF for the Milk River, Medicine Hat and Second White Specks pools. This relationship and Figures 14, 18 and 19 can be used to estimate recoverable gas for the various zones.

Recovery factors for the Bow Island and Glauconite reservoirs were based upon analogy with other similar pools in southeastern Alberta. For the Bow Island a recovery of 80% of the gas in place was used. A recovery of 85% was assigned to the Glauconite.

DISCUSSION

RESERVES

The objective of this portion of the Evaluation Drilling Program was a quantitive estimate of the potential gas reserves of the Block based upon the evaluated data from the drilling and testing program.

Basic procedures employed in the assignment of reserves to the Block were as follows:

a) The Block description shown on Figure 3 was used.

b) For the Milk River, Medicine Hat and Second White Specks pools the area indicated as productive and the net pay developed in the Evaluation Section were used to determine productive reservoir volume.

c) For the Bow Island and Glauconite pools the areas within the Block indicated as productive from the geological interpretation of discovery well data were used for reserve assignment. No reserves were assigned to other interpreted potential Bow Island or Glauconite reservoir areas.

d) The reservoir properties and recovery levels developed in the Evaluation Section were employed in the calculation of gas in place and sales gas reserves.

e) Reserves were assigned by formation on a township basis.

f) The following definitions were used to classify the reserves.

Proven Reserves - Those reserves which are considered to be recoverable to a high degree of certainty, assuming normal depletion methods and operating conditions.

Probable Reserves - Those reserves in the vicinity of proven reserves where there is some degree of engineering or geological risk.

Possible Reserves - Indicated reserves for which available data will not support a higher classification.

g) The classification of reserves as to proven, probable and possible was based upon a judgement. In making the classification consideration was given to the geological and producing characteristics of the various zones and to their development potential.

The estimated reservoir volume, gas in place and recoverable sales gas for the Milk River formation is detailed on Tables 8 and 11. Total indicated Milk River sales gas amounts to 1,993 BCF. Because of the predictability of the geology, 80% of the indicated sales gas reserve were classified as proven reserves. The remaining 20% of the indicated Milk River reserve was classified as probable reserves because of uncertainties in producing characteristics and field development programs. Proven reserves of 1,595 BCF and probable reserves of 399 BCF result.

The gas in place for the various Medicine Hat pools is shown on Table 9. Recoverable sales gas for the Medicine Hat is shown on Table 11. Reserve classification for the various pools follow:

(a) Atlee/Buffalo -Medicine Hat - 80% proven, 20% probable

(b) Medicine Hat B - 50% proven, 50% probable

(c) Alderson - 50% proven, 50% possible

(d) Jenner - 50% proven, 50% possible

(e) Princess - 50% proven, 50% possible

Proven Medicine Hat zone sales gas reserves amount to 282 BCF. Probable reserves were established at 88 BCF with a possible reserve of 35 BCF assigned to this zone. Total indicated Medicine Hat zone sales gas (Proven, probable, possible) is estimated at 405 BCF.

The reservoir volume and gas in place determinations for the Alderson and Princess Second White Specks pools is tabulated on Table 10. The sales gas reserve is shown on Table 11. The reserve classifications for these pools follow.

Alderson - 75% proven, 25% probable

Princess - 50% proven, 50% possible

Proven reserves for the Second White Specks zone amount to 98 BCF. Probable reserves of 59 BCF were also assigned to this zone.

Table 12 summarizes the reservoir volume and sales gas reserve assignments for the Bow Island and Glauconite zones. The

proven reserve assignment for these zones were based upon an acreage assignment of 1,920 acres and average pool characteristics. The remainder of the reserves indicated for these two pools were classified as possible. Proven Bow Island reserves are estimated at 7.4 BCF. Proven Glauconite reserves amount to 18 BCF. The possible Bow Island reserves are 34 BCF and possible Glauconite reserves are estimated at 110 BCF.

Table 13 is a summary of the proven, probable and possible reserves assigned to the Block based upon this evaluation. Of the total indicated 2,725 BCF of reserve approximately 2,000 BCF or 73% is classified as proven reserves, 487 BCF or 18% is classified as probable reserves and 9% (238 BCF) classified as possible reserves.

Table 14 shows the comparison of the reserves estimated in this study to those forecast for the Block in the December, 1972 study. The current estimates of 2,725 BCF of indicated recoverable sales gas reserves compares to the 4,092 BCF forecast of ultimate recovery developed in the 1972 study.

The Milk River zone reserves estimated subsequent to the Evaluation Drilling Program are, both on a per section and total Block basis, consistent with earlier projections of Block Reserves.

The sales gas reserve now estimated for the Medicine Hat formation is only about 25% of the level projected for this zone in the December, 1972 study. The major reduction in reserves forecast for the Medicine Hat is composed of the following factors:

a) 25% of the Block area is indicated as non productive from this zone.

b) The gas in place in MCF/acre foot is approximately 50% of that forecast earlier. This difference is attributable to the lower porosity and higher water saturation now considered as representative of this zone.

c) The average net pay is about 10% less than estimated previously.

d) The average recovery factor is approximately 10% less than that forecast earlier, and reflects the low deliverability of the Alderson, Jenner and Princess pools.

The sales gas reserve for the Second White Specks formation is consistent with prior estimates. Productive area in this zone is higher, however this is offset by lower gas in place per acre foot again reflecting lower porosity and higher water saturation interpreted for the Upper Cretaceous pools.

The 169 BCF of gas estimated for the Lower Cretaceous pools compares to the 400 BCF forecast in December, 1972. There is still present on the Block sufficient undrilled Lower Cretaceous potential to achieve the 400 BCF projection.

TABLE 1

SUFFIELD EVALUATION DRILLING PROGRAM

WELLS DRILLED

Well Location	Drilling Stage	Spud Date	TOTAL DEPTH Feet KB	Formation
6-1-15-6	1	18-8-73	1388	Medicine Hat
6-4-15-6	1	21-8-73	1526	Medicine Hat
7-14-15-6	1	14-8-73	1390	Medicine Hat
6-17-15-6	1	25-7-73	1453	Medicine Hat
6-1-15-7	1	23-8-73	1420	Medicine Hat
6-3-15-7	2	16-10-73	1985	Second White Specks
6-5-15-7	1	25-8-73	1448	Medicine Hat
6-15-15-7	1	18-7-73	1325	Medicine Hat
6-17-15-7	1	1-9-73	1909	Second White Specks
6-27-15-7	2	27-10-73	2310	Bow Island
6-3-15-8	1	29-8-73	1722	Medicine Hat
6-13-15-8	1	13-7-73	1370	Medicine Hat
7-15-15-8	2	20-10-73	1930	Second White Specks
6-17-15-8	1	11-7-73	1380	Medicine Hat
6-30-15-8	2	23-10-73	2070	Second White Specks
6-12-15-9	1	5-9-73	2065	Second White Specks
6-26-15-9	1	9-7-73	1530	Medicine Hat
6-32-16-5	1	3-8-73	1517	Medicine Hat
6-1-16-6	1	31-7-73	1416	Medicine Hat
6-7-16-6	1	28-7-73	1419	Medicine Hat
6-33-16-6	2	8-1-74	2104	Second White Specks
11-21-16-7	2	29-10-73	3622	Mississippian
6-33-16-7	2	12-2-74	1463	Medicine Hat
6-1-16-8	1	16-7-73	1610	Medicine Hat
6-9-16-8	1	27-8-73	2213	Second White Specks
6-33-16-8	1	18-8-73	1725	Medicine Hat
11-11-16-9	1	22-8-73	2160	Second White Specks
6-24-16-9	2	21-10-73	2555	Bow Island
6-27-16-9	1	1-8-73	2150	Second White Specks
6-8-17-4	1	1-9-73	1582	Medicine Hat
6-28-17-5	2	20-12-73	1370	Medicine Hat
6-11-17-6	2	15-2-74	2110	Second White Specks
6-28-17-6	2	6-1-74	1675	Medicine Hat
6-13-17-7	2	3-1-74	2160	Second White Specks
6-28-17-7	2	5-2-74	1532	Medicine Hat
6-13-17-8	2	17-12-73	2340	Second White Specks
6-17-17-8	2	9-2-74	1690	Medicine Hat
6-10-17-9	2	16-10-73	2900	Basal Colorado

TABLE 1 - Continued

SUFFIELD EVALUATION DRILLING PROGRAM

WELLS DRILLED

Well Location	Drilling Stage	Spud Date	TOTAL DEPTH Feet KB	Formation
6-35-17-9	1	29-7-73	1638	Medicine Hat
6-10-18-4	2	12-11-73	3160	Mississippian
6-28-18-4	1	5-8-73	1491	Medicine Hat
6-15-18-5	2	10-12-73	2020	Second White Specks
6-2-18-6	2	1-11-73	2573	Bow Island
6-28-18-6	2	10-1-74	2318	Second White Specks
6-12-18-7	2	22-1-74	1718	Medicine Hat
6-21-18-7	2	29-1-74	1728	Medicine Hat
6-4-18-8	2	14-12-73	2320	Second White Specks
6-19-18-8	2	20-1-74	3420	Mississippian
6-23-18-8	2	6-12-73	2345	Second White Specks
6-23-18-9	2	2-12-73	2290	Second White Specks
6-35-18-9	2	22-11-73	3026	Basal Colorado
10-17-19-3	1	7-8-73	1547	Medicine Hat
6-16-19-4	1	10-8-73	1486	Medicine Hat
6-34-19-4	2	31-10-73	1429	Medicine Hat
6-16-19-5	2	8-12-73	1720	Medicine Hat
6-32-19-5	2	5-12-73	1790	Medicine Hat
6-36-19-5	2	14-11-73	1687	Medicine Hat
6-23-19-6	2	21-11-73	2671	Bow Island
6-29-19-6	2	5-12-73	3563	Mississippian
6-34-19-6	2	30-11-73	1800	Medicine Hat
6-16-19-7	2	13-11-73	1889	Medicine Hat
10-22-19-7	2	8-2-74	3010	Basal Colorado
6-32-19-7	2	19-11-73	1755	Medicine Hat
6-35-19-7	2	8-11-73	1650	Medicine Hat
6-12-19-8	2	15-11-73	2941	Basal Colorado
6-19-19-8	2	26-11-73	2360	Second White Specks
6-22-19-8	2	23-11-73	1678	Medicine Hat
6-6-20-3	1	15-8-73	1470	Medicine Hat
6-7-20-4	2	5-11-73	1670	Medicine Hat
6-10-20-4	2	9-11-73	2340	Bow Island
6-10-20-5	2	18-11-73	1690	Medicine Hat
6-8-20-6	2	27-11-73	3135	Basal Colorado
6-12-20-6	2	24-11-73	1850	Medicine Hat
6-10-20-7	2	29-10-73	1588	Medicine Hat
6-8-20-8	2	17-12-73	3256	Mississippian
6-12-20-8	2	1-11-73	1665	Medicine Hat
11-16-20-8	2	9-1-74	3264	Mississippian

TABLE 2

SUFFIELD EVALUATION DRILLING PROGRAM STATISTICS

STAGE	FORMATION	WHITCO 1			WHITCO 2			TOTALS		
		No. of Wells	Footage	Rig Operating Days	No. of Wells	Footage	Rig Operating Days	No. of Wells	Footage	Rig Operating Days
1	Medicine Hat	3	4,833	9.2	19	28,020	46.5	22	32,853	55.7
1	Second White Specks	5	10,497	17.7	0	0	0	5	10,497	17.7
	SUB TOTAL STAGE 1	8	15,330	26.9	19	28,020	46.5	27	43,350	73.4
2	Medicine Hat	6	10,225	22.7	15	24,812	54.4	21	35,037	77.1
2	Second White Specks	10	21,904	38.9	3	6,448	24.8	13	28,352	63.7
2	Sub Total	16	32,129	61.6	18	31,260	79.2	34	63,389	140.8
		KENTING 35			KENTING 57					
2	Bow Island	1	2,671	4.9	4	9,778	21.1	5	12,449	26.0
2	Basal Colorado	2	6,145	12.9	3	8,867	19.5	5	15,012	32.4
2	Mississippian	6	20,285	64.4	-	-	-	6	20,285	64.4
2	Sub Total	9	29,101	82.2	7	18,645	40.6	16	47,746	122.8
	SUB TOTAL STAGE 2							50	111,135	263.6
	TOTAL DRILLING PROGRAM							77	154,485	337.0

TABLE 3

SUFFIELD EVALUATION DRILLING PROGRAM
MILK RIVER RESERVOIR PROPERTIES

	Units	ZONE				Average
		A-1	A-2	B-1	B-2	
Net Thickness	Feet	18.5	21.5	16.0	15.0	68
Porosity	%	12.7	14.4	14.4	13.9	14.0
Average Water Saturation	%	63	62.5	62.5	60	62.5
Original Pressure	psia	475	475	475	475	475
Reservoir Temperature	^{o}R	520	520	520	520	520
Initial Compressibility	-	.93	.93	.93	.93	.93
Pressure Base	psia	14.4	14.4	14.4	14.4	14.4
Temperature Base	^{o}R	520	520	520	520	520
Raw Gas in Place	MCF/AF	73	83	83	86	81.4
	MMCF/SEC	857	1,151	858	823	4,0[illegible]
Recovery Factor	%					71.1
Recoverable Raw Gas	MCF/AF					66.[illegible]
Surface Loss	%					4
Recoverable Sales Gas	MCF/AF					63.1
	MMCF/SEC					3,[illegible]

TABLE 4

SUFFIELD EVALUATION DRILLING PROGRAM
MEDICINE HAT RESERVOIR PROPERTIES

		POOL				
	Units	Atlee/Buffalo Medicine Hat A	Medicine Hat B	Alderson	Jenner	Princess
Net Thickness	Feet	7.8	4.2	5.3	5.3	5.7
Porosity	%	13.5	13.5	13.5	13.5	13.5
Average Water Saturation	%	57.5	57.5	57.5	57.5	57.5
Original Pressure	psia	640	640	640	640	640
Reservoir Temperature	^{o}R	522	522	522	522	522
Initial Compressibility	-	.91	.91	.91	.91	.91
Pressure Base	psia	14.4	14.4	14.4	14.4	14.4
Temperature Base	^{o}R	520	520	520	520	520
Raw Gas in Place	MCF/AF	121	121	121	121	121
	MMCF/SEC	614	326	412	412	443
Recovery Factor	%	87	87	68	68	68
Recoverable Raw Gas	MCF/AF	106	106	83	83	83
Surface Loss	%	4	4	4	4	4
Recoverable Sales Gas	MCF/AF	101	101	79	79	79
	MMCF/SEC	513	272	270	270	270

TABLE 5

SUFFIELD EVALUATION DRILLING PROGRAM
SECOND WHITE SPECKS RESERVOIR PROPERTIES

	Units	POOL	
		Alderson	Princess
Net Thickness	Feet	6.0	3.6
Porosity	%	15.0	15.0
Average Water Saturation	%	57.5	57.5
Original Pressure	psia	840	840
Reservoir Temperature	^{o}R	540	540
Initial Compressibility		.89	.89
Pressure Base	psia	14.4	14.4
Temperature Base	^{o}R	520	520
Raw Gas in Place	MMCF/AF	172	172
	MMCF/SEC	660	396
Recovery Factor	%	88	55
Recoverable Raw Gas	MCF/MF	151	95
Surface Loss	%	4	4
Recoverable Sales Gas	MCF/AF	145	91
	MMCF/SEC	556	209

TABLE 6

SUFFIELD EVALUATION DRILLING PROGRAM
BOW ISLAND AND GLAUCONITE RESERVOIR PROPERTIES

	Units	Bow Island	Glauconite
Well Bore Data Base		6-10-18-4	6-19-18-8
Net Thickness	Feet	5	24
Porosity	%	17	25
Average Water Saturation	%	45	40
Original Pressure	psia	1,012	1,520
Reservoir Temperature	^{o}R	540	564
Initial Compressibility	-	.88	.86
Pressure Base	psia	14.4	14.4
Temperature Base	^{o}R	520	520
Raw Gas in Place	MCF/AF	313	710
	MMCF/SEC	1,000	10,900
Recovery Factor	%	80	85
Recoverable Raw Gas	MCF/AF	250	603
Surface Loss	%	4	4
Recoverable Sales Gas	MCF/AF	240	579
	MMCF/SEC	768	8,898

TABLE 7

SUFFIELD EVALUATION DRILLING PROGRAM
CALCULATED STABILIZED AOF VALUES-UPPER CRETACEOUS

Pool	MILK RIVER FORMATION	MEDICINE HAT FORMATION						SECOND WHITE SPECKS FORMATION		
	Stabilized AOF MCFD	Atlee/Buffalo Medicine Hat Pool	Medicine Hat B Pool	Alderson Pool	Jenner Pool	Princess Pool	Stabilized AOF MCFD	Alderson Pool	Princess Pool	Stabilized AOF MCFD
6- 1-15-6	131	X	X				118			
6- 4-15-6	81	X	X				74			
7-14-15-6	369	X	X				197			
6-17-15-6	41	X					76			
6- 1-15-7	22		X	X			103			
6- 3-15-7	216							X		158
6- 5-15-7	180									
6-15-15-7	348			X			71			
6-17-15-7	150							X		239
6-27-15-7	94							X		198
6- 3-15-8	62					T.S.T.M.				
6-13-15-8	140			X			27			
7-15-15-8	128							X		700
6-17-15-8	112			X			29			
6-30-15-8	198							X		743
6-12-15-9	176							X		1139
6-26-15-9	147			X			49			
6-32-16-5	172			X			209			
6- 1-16-6	258	X	X				204			
6- 7-16-6	231	X					250			
6-33-16-6	205								X	88
11-21-16-7	262								X	208
6-33-16-7	169					X	36			
6- 1-16-8	198					X	94			
6- 9-16-8	375							X		455
6-33-16-8	382		X			X	187			
11-11-16-9	323							X		860
6-24-16-9	58							X		506
6-27-16-9	193							X		735
6- 8-17-4	256	X	X				318			
6-28-17-5	292	X					545			
6-11-17-6	135								X	T.S.T.M.

TABLE 7 - Continued

6-28-17-6	410	X				• 197				
6-13-17-7	256								X	50
6-28-17-7	130			X		69				
6-13-17-8	97								X	165
6-17-17-8	26				X	45				
6-10-17-9	121							X		248
6-35-17-9	377									
6-10-18-4		Bow Island Completion								
6-28-18-4	520			T.S.T.M.						
6-15-18-5									X	70
6- 2-18-6	438								X	5
6-28-18-6									X	121
6-12-18-7	163									
6-21-18-7	125		X			70				
6- 4-18-8	609								X	46
6-19-18-8		Completed in Glauconite								
6-23-18-8	113									75
6-23-18-9					X	99			X	93
6-35-18-9	189								X	33
10-17-19-3	176	X				411				
6-16-19-4	932	X				382				
6-34-19-4		X				356				
6-16-19-5	20	X				53				
6-32-19-5	6	X				296				
6-36-19-5	3	X				441				
6-23-19-6		X				300				T.S.T.M.
6-29-19-6	18	X				172				
6-34-19-6	10	X				315				
6-16-19-7		X				287				
10-22-19-7		X				408			X	41
6-32-19-7		X				490				
6-35-19-7	66	X				189				170
6-12-19-8			X			68			X	116
6-19-19-8	20								X	
6-22-19-8	121	X				225				
6- 6-20-3		X				168				
6- 7-20-4	71	X				415				
6-10-20-4	32								X	20
6-10-20-5	19	X				557				
6- 8-20-6	16	X				1113				
6-12-20-6	12					975				
6-10-20-7	9	X				1323				
6- 8-20-8		X				488			X	43
6-12-20-8	10	X				882				
11-16-20-8		Completed in Glauconite								
Average Stabilized AOF -	180	375	81	69	92	282	544	84		271

X Perforated Zone
T.S.T.M. Flow Rate too small to measure.

TABLE 8

SUFFIELD EVALUATION DRILLING PROGRAM
MILK RIVER GAS IN PLACE SUMMARY

Township Range (W4M)	Gross Area Within Block Sections	Gross Area Within Block Acres	A-1 ZONE Productive Area Acres	A-1 ZONE Avg. Net Pay	A-1 ZONE Reservoir Acre-Ft.	A-1 ZONE GIP BCF	A-2 ZONE Productive Area Acres	A-2 ZONE Avg. Net Pay	A-2 ZONE Reservoir Acre-Ft.	A-2 ZONE GIP BCF	B-1 ZONE Productive Area Acres	B-1 ZONE Avg. Net Pay	B-1 ZONE Reservoir Acre-Ft.	B-1 ZONE GIP BCF	B-2 ZONE Productive Area Acres	B-2 ZONE Avg. Net Pay	B-2 ZONE Reservoir Acre-Ft.	B-2 ZONE GIP BCF	TOTAL Productive Area Acres	TOTAL Avg. Net Pay	TOTAL Reservoir Acre-Ft.	TOTAL GIP BCF
15-5	15.54	9,951	9,536	16.24	154,880	11.24	9,536	11.07	105,600	8.81	9,536	15.20	144,960	12.09	4,992	19.88	99,264	8.63	9,536	52.94	504,704	40.67
15-6	36.00	23,040	23,040	13.11	302,080	21.93	21,312	13.74	292,928	24.43	21,376	15.24	325,824	27.17	15,040	9.02	135,680	11.63	21,312	45.83	1,356,512	84.18
15-7	36.00	23,040	23,040	23.05	531,200	38.57	19,328	14.44	279,232	23.29	20,224	12.55	253,952	21.18	20,160	12.75	257,152	22.09	23,040	57.36	1,321,536	104.53
15-8	36.00	23,040	23,040	21.19	488,320	35.45	23,040	12.16	280,320	23.38	9,984	6.89	68,800	5.74	27,840	15.72	562,240	44.12	23,040	52.08	1,199,680	85.69
15-9	19.33	12,320	12,320	45.42	559,680	40.63	12,320	16.78	206,720	17.24	-	-	-	-	12,320	23.27	286,720	24.63	12,320	98.48	1,053,120	82.50
16-5	24.40	13,696	11,968	32.07	383,808	27.86	13,696	28.29	387,520	32.32	13,696	28.22	386,560	32.24	13,696	24.81	339,840	28.19	13,696	109.35	1,497,728	121.61
16-6	36.00	23,040	23,040	24.00	552,960	40.14	23,040	18.22	419,840	35.01	23,040	18.88	435,200	36.30	14,528	21.21	308,160	26.42	23,040	74.40	1,716,160	137.92
16-7	36.00	23,040	23,040	25.11	578,560	42.00	23,040	22.36	515,200	42.97	23,040	17.36	400,000	34.36	18,304	15.72	324,480	27.87	23,040	78.32	1,818,240	146.20
16-8	36.00	23,040	23,040	22.44	517,120	37.54	23,040	18.69	407,680	34.00	14,008	12.68	139,984	11.64	24,840	14.77	340,480	29.25	24,840	60.98	1,444,864	112.43
16-9	18.00	11,520	11,520	17.72	204,160	14.82	11,520	13.05	150,400	12.54	3,072	6.14	18,880	1.57	11,520	12.50	184,000	12.37	11,520	44.92	517,440	41.30
17-3	1.70	1,088	1,088	7.88	8,576	0.62	1,088	30.00	32,640	2.72	1,088	26.59	28,928	2.41	1,088	20.29	22,080	1.90	1,088	84.76	92,224	7.65
17-4	33.40	21,376	17,728	9.47	166,208	12.07	21,376	28.91	618,560	51.59	21,376	26.39	564,160	47.05	20,096	27.12	545,152	46.83	21,376	88.61	1,894,080	157.54
17-5	36.00	23,040	12,480	8.41	104,960	7.62	23,040	25.03	576,640	48.09	23,040	19.22	442,880	36.93	24,040	17.27	398,080	34.20	23,040	66.08	1,522,560	126.84
17-6	36.00	23,040	15,936	17.04	271,552	19.71	23,040	32.30	744,320	62.08	22,400	18.88	423,040	35.28	24,040	17.69	407,680	35.02	24,040	80.15	1,846,592	152.09
17-7	36.00	23,040	23,040	13.28	305,920	22.21	23,040	24.47	563,840	47.02	23,040	13.00	299,520	24.98	16,704	16.37	273,536	23.50	23,040	62.62	1,442,816	117.71
17-8	36.00	23,040	24,040	34.80	801,920	58.22	23,040	34.47	794,240	66.24	19,520	12.94	252,544	21.06	22,656	15.29	346,432	29.76	23,040	95.28	2,195,136	175.28
17-9	18.00	11,520	11,520	17.11	197,120	14.31	11,520	18.55	213,760	17.83	7,296	8.94	65,280	5.44	11,520	12.16	140,160	12.04	11,520	53.50	616,320	49.62
18-3	3.60	2,304	2,104	7.19	16,576	1.20	2,304	30.00	69,120	5.76	2,304	21.94	50,560	4.22	2,304	11.08	25,536	2.19	2,304	70.22	161,792	13.37
18-4	36.00	23,040	18,112	8.05	145,920	10.59	23,040	29.42	677,760	56.53	21,760	24.41	531,200	44.30	20,800	13.89	289,088	24.83	23,040	71.35	1,643,968	136.25
18-5	36.00	23,040	17,408	7.97	138,624	10.06	22,976	24.46	516,224	43.05	23,040	22.11	509,440	42.49	19,712	11.81	232,960	20.01	23,040	60.64	1,397,248	115.61
18-6	36.00	23,040	16,768	24.15	400,064	29.04	23,040	29.27	674,560	56.26	22,400	15.61	347,520	28.98	20,928	8.76	183,488	15.76	23,040	69.69	1,605,632	130.04
18-7	36.00	23,040	20,224	17.25	348,928	25.33	23,040	31.16	718,080	59.89	23,040	13.80	318,080	26.53	22,208	14.56	323,840	27.82	24,040	74.77	1,708,928	139.57
18-8	36.00	23,040	17,216	11.30	194,560	14.13	23,040	24.30	560,000	46.70	19,712	8.63	170,240	14.20	13,568	8.93	121,216	10.41	23,040	45.40	1,046,016	85.44
18-9	18.00	11,520	6,848	21.32	146,048	10.60	11,520	25.66	295,640	24.66	4,160	6.78	28,224	2.35	3,968	9.72	38,592	3.32	11,520	44.34	508,504	40.93
19-3	27.00	17,280	2,240	5.00	11,200	0.81	17,216	16.17	278,528	23.23	17,216	21.52	370,560	30.90	4,672	6.34	29,632	2.55	17,216	40.07	689,920	57.49
19-4	36.00	23,040	8,320	4.53	37,762	2.74	22,400	18.11	405,760	33.84	22,592	19.43	439,104	36.62	12,160	6.81	82,880	7.12	22,592	42.74	965,506	80.32
19-5	36.00	23,040	6,976	6.17	43,008	3.12	15,744	11.73	216,192	18.03	14,080	12.74	179,392	14.96	4,096	6.01	24,640	2.12	15,744	29.42	463,232	38.23
19-6	36.00	23,040	704	5.19	3,648	0.26	5,696	8.63	49,152	4.10	6,912	6.07	41,984	3.50	1,472	2.87	4,224	0.36	6,912	14.32	99,008	8.22
19-7	36.00	23,040	6,272	13.83	86,720	6.30	22,912	19.60	449,280	37.47	17,152	9.59	164,544	13.72	4,544	3.98	18,112	1.56	22,912	31.37	718,656	59.05
19-8	35.00	22,400	6,784	2.65	17,984	1.31	19,968	17.30	345,472	28.81	12,800	7.58	97,024	8.09	3,776	5.30	20,032	1.72	19,968	24.06	480,512	39.93
19-9	7.00	4,480	-	-	-	-	4,480	17.42	78,080	6.51	-	-	-	-	-	-	-	-	4,480	17.43	78,080	6.51
20-3	18.00	11,520	-	-	-	-	11,520	20.00	230,400	19.22	11,520	20.00	230,400	19.22	-	-	-	-	11,520	40.00	460,800	38.44
20-4	18.00	11,520	-	-	-	-	6,592	11.46	75,584	6.30	9,216	12.08	111,360	9.29	-	-	-	-	9,216	20.28	186,944	15.59
20-5	18.00	11,520	-	-	-	-	1,088	4.17	4,544	0.38	2,048	5.40	11,072	0.92	-	-	-	-	2,048	7.63	15,616	1.30
20-6	18.00	11,520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-7	18.00	11,520	-	-	-	-	10,880	17.16	186,752	15.58	7,552	9.13	68,992	5.75	-	-	-	-	10,880	23.51	255,744	21.33
20-8	15.00	9,600	-	-	-	-	5,248	11.84	62,144	5.18	3,712	7.22	26,816	2.24	-	-	-	-	5,248	16.95	88,960	7.42
	1006.89	644,415	418,392	18.45	7,720,066	560.43	578,720	21.57	12,482,712	1041.06	493,952	16.09	7,946,621	662.72	408,992	14.98	6,125,376	526.16	589,216	58.17	34,274,778	2,790.40

LAST KLOMPFER LTD

TABLE 9

SUFFIELD EVALUATION DRILLING PROGRAM
MEDICINE HAT GAS IN PLACE SUMMARY

Township Range W4M	Gross Area Within Limit Sections	Gross Area Within Limit Acres	ATLEE BUFFALO - MEDICINE HAT Productive Area Acres	Avg. Net Pay	Reservoir Acre-Ft.	GIP BCF	MEDICINE HAT B Productive Area Acres	Avg. Net Pay	Reservoir Acre-Ft.	GIP BCF	ALDERSON Productive Area Acres	Avg. Net Pay	Reservoir Acre-Ft.	GIP BCF	[illegible] Productive Area Acres	Avg. Net Pay	Reservoir Acre-Ft.	GIP BCF	PRINCESS Productive Area Acres	Avg. Net Pay	Reservoir Acre-Ft.	GIP BCF	TOTAL Productive Area Acres	Avg. Net Pay	Reservoir Acre-Ft.	GIP BCF
15-5	15.54	9,951	9,536	7.88	75,136	9.14	9,536	7.49	71,424	8.69	-	-	-	-	-	-	-	-	-	-	-	-	9,536	15.37	146,560	17.82
15-6	36.00	23,040	20,992	8.36	175,488	21.34	22,400	7.95	178,176	21.67	-	-	-	-	-	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	3,456	2.84	9,824	1.21	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	192	1.50	288	0.04	[illegible]	[illegible]	[illegible]	[illegible]
15-9	19.25	12,320	-	-	-	-	3,520	2.73	9,632	1.17	5,824	3.81	22,240	2.70	-	-	-	-	-	-	-	-	20,288	8.10	164,352	19.99
16-5	21.40	13,696	13,696	11.83	161,984	19.70	13,696	6.32	86,528	10.52	-	-	-	-	-	-	-	-	-	-	-	-	5,824	5.47	31,872	3.88
16-6	36.00	23,040	21,568	7.99	172,288	20.95	15,424	5.73	88,416	10.75	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]
16-7	36.00	23,040	1,280	1.88	2,400	0.29	5,120	3.50	17,984	2.19	-	-	-	-	1,856	3.40	6,208	0.75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16-8	36.00	23,040	-	-	-	-	2,304	1.69	3,904	0.47	3,968	3.42	21,696	2.64	-	-	-	-	12,224	5.91	72,256	8.79	[illegible]	[illegible]	[illegible]	[illegible]
16-9	18.00	11,520	-	-	-	-	4,992	1.71	8,576	1.04	10,816	4.31	46,720	5.68	-	-	-	-	-	-	-	-	12,224	8.01	97,856	11.90
17-3	1.70	1,088	896	13.43	12,032	1.46	1,088	2.00	2,176	0.26	-	-	-	-	-	-	-	-	-	-	-	-	10,816	5.11	55,296	6.72
17-4	33.40	21,376	21,376	12.73	272,128	33.09	19,072	2.02	38,624	4.70	-	-	-	-	-	-	-	-	-	-	-	-	1,088	13.06	14,208	1.73
17-5	36.00	23,040	23,040	10.69	246,400	29.96	16,768	3.28	55,104	6.70	-	-	-	-	-	-	-	-	-	-	-	-	21,376	14.54	310,752	37.79
17-6	36.00	23,040	17,984	6.88	123,776	15.05	11,392	3.02	34,432	4.19	-	-	-	-	1,984	6.30	12,496	1.04	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]
17-7	36.00	23,040	-	-	-	-	832	1.84	1,536	0.19	-	-	-	-	11,520	6.89	79,392	9.65	3,328	4.44	14,752	1.79	17,984	9.27	166,784	20.28
17-8	36.00	23,040	-	-	-	-	4,864	1.88	9,184	1.12	-	-	-	-	-	-	-	-	19,392	6.87	133,248	16.20	11,520	8.31	95,680	11.63
17-9	18.00	11,520	-	-	-	-	-	-	-	-	1,152	1.67	1,920	0.23	-	-	-	-	4,736	3.67	17,376	2.11	19,392	7.34	142,432	17.32
18-3	3.60	2,304	2,304	7.33	16,896	2.05	320	1.00	320	0.04	-	-	-	-	-	-	-	-	-	-	-	-	4,736	4.07	19,296	2.35
18-4	36.00	23,040	18,048	7.82	141,088	17.16	7,872	1.87	14,752	1.79	-	-	-	-	-	-	-	-	-	-	-	-	2,304	7.47	17,216	2.09
18-5	36.00	23,040	23,040	7.91	182,144	22.15	7,360	1.77	13,056	1.59	-	-	-	-	-	-	-	-	-	-	-	-	18,048	8.63	155,840	18.95
18-6	36.00	23,040	10,688	5.16	55,168	6.71	4,544	3.95	17,952	2.18	-	-	-	-	1,088	4.55	4,960	0.60	-	-	-	-	23,040	8.47	195,200	23.74
18-7	36.00	23,040	-	-	-	-	-	-	-	-	-	-	-	-	13,888	7.08	98,336	11.96	-	-	-	-	10,688	7.31	78,080	9.49
18-8	36.00	23,040	-	-	-	-	-	-	-	-	-	-	-	-	6,272	3.81	23,904	2.91	1,600	2.66	4,256	0.52	13,888	7.08	98,336	11.96
18-9	18.00	11,520	-	-	-	-	-	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]
19-3	27.00	17,280	8,576	5.40	46,336	5.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,424	4.78	20,640	2.51
19-4	36.00	23,040	18,816	7.95	149,568	18.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,576	5.40	46,336	5.63
19-5	36.00	23,040	16,576	4.04	66,976	8.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,816	7.95	149,568	18.19
19-6	36.00	23,040	16,960	3.67	62,208	7.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,576	4.04	66,976	8.14
19-7	36.00	23,040	15,232	5.41	82,496	10.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,960	3.67	62,208	7.56
19-8	35.00	22,400	10,816	3.15	34,067	4.14	-	-	-	-	-	-	-	-	7,488	3.15	23,616	2.87	-	-	-	-	15,232	5.42	82,496	10.03
19-9	7.00	4,480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,816	3.15	57,683	7.01
20-3	18.00	11,520	1,792	3.62	6,496	0.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-4	18.00	11,520	10,816	9.93	107,456	13.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,792	3.62	6,496	0.79
20-5	18.00	11,520	11,520	9.16	105,600	12.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,816	9.94	107,456	13.07
20-6	18.00	11,520	11,520	8.27	95,360	11.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,520	9.17	105,600	12.84
20-7	18.00	11,520	11,520	9.83	113,280	13.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,520	8.28	95,360	11.60
20-8	15.00	9,600	9,600	7.30	70,080	8.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,520	9.84	113,280	13.77
																							9,600	7.30	70,080	8.52
	1,006.89	644,415	328,576	7.84	2,577,491	313.42	164,736	4.18	689,376	83.82	47,936	5.37	257,536	31.31	49,856	5.76	362,104	31.90	57,280	5.75	329,568	40.07	462,336	8.90	4,116,275	500.54

LAST MODIFIED [illegible]

TABLE 10

SUFFIELD EVALUATION DRILLING PROGRAM
SECOND WHITE SPECKS GAS IN PLACE SUMMARY

Township Range (W4M)	Gross Area Within Block Section	Gross Area Within Block Acres	ALDERSON Productive Area Acres	ALDERSON Avg. Net Pay	ALDERSON Reservoir Acre-Ft.	ALDERSON GIP BCF	PRINCESS Productive Area Acres	PRINCESS Avg. Net Pay	PRINCESS Reservoir Acre-Ft.	PRINCESS GIP BCF	TOTAL Productive Area Acres	TOTAL Avg. Net Pay	TOTAL Reservoir Acre-Ft.	TOTAL GIP BCF
15-5	15.54	9,951	-	-	-	-	-	-	-	-	-	-	-	-
15-6	36.00	23,040	3,456	2.29	7,936	1.36	-	-	-	-	3,456	2.29	7,936	1.36
15-7	36.00	23,040	21,888	5.75	125,888	21.65	-	-	-	-	21,888	5.75	125,888	21.65
15-8	36.00	23,040	23,040	7.15	164,800	28.35	-	-	-	-	23,040	7.15	164,800	28.34
15-9	19.25	12,320	12,320	8.16	100,480	17.28	-	-	-	-	12,320	8.16	100,480	17.28
16-5	21.40	13,696	-	-	-	-	3,584	1.53	5,504	0.95	3,584	1.53	5,504	0.95
16-6	36.00	23,040	-	-	-	-	20,096	2.68	54,016	9.29	20,096	2.68	54,016	9.29
16-7	36.00	23,040	1,260	1.82	2,304	0.40	11,776	3.28	38,720	6.66	11,776	3.48	41,024	7.06
16-8	36.00	23,040	12,288	3.67	45,184	7.77	-	-	-	-	12,288	3.67	45,184	7.77
16-9	18.00	11,520	11,520	6.72	77,440	13.32	-	-	-	-	11,520	6.72	77,440	13.32
17-3	1.70	1,088	-	-	-	-	-	-	-	-	-	-	-	-
17-4	33.40	21,376	-	-	-	-	-	-	-	-	-	-	-	-
17-5	36.00	23,040	-	-	-	-	1,792	1.0	1,792	0.31	1,792	1.0	1,792	0.31
17-6	36.00	23,040	-	-	-	-	16,128	2.96	47,808	8.22	16,128	2.96	47,808	8.22
17-7	36.00	23,040	-	-	-	-	23,040	5.19	119,680	20.58	23,040	5.19	119,680	20.58
17-8	36.00	23,040	-	-	-	-	16,128	2.86	46,208	7.95	16,128	2.86	46,208	7.95
17-9	18.00	11,520	1,920	1.60	3,072	0.53	3,968	2.77	11,008	1.89	3,968	3.55	14,080	2.42
18-3	3.60	2,304	-	-	-	-	-	-	-	-	-	-	-	-
18-4	36.00	23,040	-	-	-	-	-	-	-	-	-	-	-	-
18-5	36.00	23,040	-	-	-	-	11,648	2.29	26,688	4.59	11,648	2.29	26,688	4.59
18-6	36.00	23,040	-	-	-	-	22,400	3.57	80,000	13.76	22,400	3.57	80,000	13.76
18-7	36.00	23,040	-	-	-	-	23,040	3.72	85,760	14.75	23,040	3.72	85,760	14.75
18-8	36.00	23,040	-	-	-	-	23,040	4.55	104,960	18.05	23,040	4.55	104,960	18.05
18-9	18.00	11,520	-	-	-	-	11,520	3.97	45,760	7.87	11,520	3.97	45,760	7.87
19-3	27.00	17,280	-	-	-	-	-	-	-	-	-	-	-	-
19-4	36.00	23,040	-	-	-	-	-	-	-	-	-	-	-	-
19-5	36.00	23,040	-	-	-	-	-	-	-	-	-	-	-	-
19-6	36.00	23,040	-	-	-	-	3,328	1.94	6,464	1.11	3,328	1.94	6,464	1.11
19-7	36.00	23,040	-	-	-	-	18,880	3.28	62,080	10.68	18,880	3.28	62,080	10.68
19-8	35.00	22,400	-	-	-	-	22,400	4.15	93,120	16.02	22,400	4.15	93,120	16.02
19-9	7.00	4,480	-	-	-	-	4,480	5.21	23,360	4.02	4,480	5.21	23,360	4.02
20-3	18.00	11,520	-	-	-	-	-	-	-	-	-	-	-	-
20-4	18.00	11,520	-	-	-	-	-	-	-	-	-	-	-	-
20-5	18.00	11,520	-	-	-	-	-	-	-	-	-	-	-	-
20-6	18.00	11,520	-	-	-	-	-	-	-	-	-	-	-	-
20-7	18.00	11,520	-	-	-	-	1,216	1.52	1,856	0.32	1,216	1.52	1,856	0.32
20-8	15.00	9,600	-	-	-	-	9,216	2.80	25,856	4.45	9,216	2.80	25,856	4.45
	1006.89	644,415	87,692	6.01	527,104	90.66	247,680	3.56	880,640	151.47	332,192	4.24	1,407,744	242.12

TABLE 11

SUFFIELD EVALUATION DRILLING PROGRAM
UPPER CRETACEOUS SALES GAS RESERVES

Township Range (W4M)	MILK RIVER				MEDICINE HAT				SECOND WHITE SPECKS				TOTAL		
	GIP BCF	RF%	REC. RAW GAS BCF	REC. SALES GAS BCF	GIP BCF	RF%	REC. RAW GAS BCF	REC. SALES GAS BCF	GIP BCF	RF%	REC. RAW GAS BCF	REC. SALES GAS BCF	GIP BCF	REC. RAW GAS BCF	REC. SALES GAS BCF
15-5	40.67	72.8	29.61	28.42	17.82	88.0	15.68	15.05	-	-	-	-	48.49	45.29	43.47
15-6	85.18	70.5	60.05	57.65	43.01	88.3	37.98	36.46	1.36	81.0	1.10	1.06	129.55	99.13	95.17
15-7	105.13	75.7	79.58	76.40	5.95	75.5	4.49	4.31	21.65	90.0	19.49	18.71	132.73	103.56	99.42
15-8	95.69	74.8	71.58	68.71	19.99	79.6	15.91	15.28	28.34	92.0	26.07	25.03	144.02	113.56	109.50
15-9	82.50	77.8	64.19	61.62	3.88	70.3	2.73	2.62	17.28	93.0	16.07	15.43	103.66	82.99	79.19
16-5	121.61	80.3	97.65	93.75	30.22	88.5	26.74	25.68	0.95	35.0	0.33	0.32	152.78	124.72	119.75
16-6	137.92	76.3	105.23	101.02	32.02	87.3	27.95	26.84	9.29	43.0	3.99	3.84	179.23	137.17	131.70
16-7	146.20	77.0	112.57	108.07	11.95	84.4	10.09	9.68	7.06	72.3	5.10	4.90	165.21	127.76	122.65
16-8	112.43	74.4	83.65	80.30	11.90	74.1	8.82	8.47	7.77	85.7	6.66	6.39	132.10	99.13	95.16
16-9	41.30	70.5	29.12	27.95	6.72	68.9	4.63	4.44	13.32	92.0	12.25	11.75	61.34	46.00	44.15
17-3	7.65	77.7	5.94	5.71	1.73	87.7	1.52	1.46	-	-	-	-	9.38	7.46	7.17
17-4	147.54	78.3	123.35	118.42	37.79	88.0	33.26	31.93	-	-	-	-	195.33	156.61	150.35
17-5	126.84	75.0	95.13	91.32	36.66	87.7	32.15	30.86	0.31	35.0	0.11	0.10	163.81	127.39	122.28
17-6	152.09	77.0	117.11	112.43	20.28	86.7	17.58	16.88	8.22	46.0	3.78	3.63	180.59	138.47	132.94
17-7	117.71	75.0	88.28	84.75	11.63	74.7	8.69	8.34	20.58	61.0	12.55	12.05	149.92	109.52	105.14
17-8	175.28	79.0	138.47	132.93	17.32	72.8	12.61	12.10	7.95	46.0	3.65	3.51	200.55	154.73	148.54
17-9	49.62	73.2	36.32	34.87	2.35	64.5	1.52	1.46	2.42	50.2	1.21	1.17	54.39	39.05	37.50
18-3	13.37	75.9	10.15	9.74	2.09	86.7	1.81	1.74	-	-	-	-	15.46	11.96	11.48
18-4	136.25	75.8	103.41	99.28	18.95	87.0	16.49	15.83	-	-	-	-	155.20	119.90	115.11
18-5	115.61	74.4	86.01	82.57	23.74	87.0	20.65	19.83	4.59	40.0	1.84	1.76	143.94	108.50	104.16
18-6	130.04	77.8	101.17	97.12	9.49	85.5	8.11	7.79	13.76	52.8	7.27	6.97	153.29	116.55	111.88
18-7	139.57	76.4	106.63	102.37	11.96	72.0	8.61	8.27	14.75	53.5	7.89	7.58	166.28	123.13	118.22
18-8	85.44	70.5	60.24	57.83	3.42	66.4	2.27	2.18	18.05	57.8	10.43	10.02	106.91	72.94	70.03
18-9	40.93	70.0	28.65	27.51	2.51	60.0	1.51	1.45	7.87	53.5	4.21	4.04	51.31	34.37	33.00
19-3	57.49	71.7	41.22	39.57	5.63	86.0	4.84	4.65	-	-	-	-	63.12	46.06	44.22
19-4	80.32	69.4	55.74	53.51	18.19	86.3	15.70	15.07	-	-	-	-	98.51	71.44	68.58
19-5	38.23	63.0	24.08	23.12	8.14	85.4	6.95	6.67	-	-	-	-	46.37	31.03	29.79
19-6	8.22	43.3	3.56	3.42	7.56	85.4	6.46	6.20	1.11	35.0	0.39	0.37	16.89	10.41	9.99
19-7	59.05	64.0	37.79	36.28	10.03	86.2	8.65	8.30	10.68	51.6	5.51	5.29	79.76	51.95	49.87
19-8	39.93	59.0	23.56	22.62	7.01	75.3	5.07	4.86	16.02	56.7	9.08	8.72	62.96	37.71	36.20
19-9	6.51	51.0	3.32	3.18	-	-	-	-	4.02	61.0	2.45	2.35	10.53	5.77	5.53
20-3	38.44	68.4	26.29	25.24	0.79	85.4	0.67	0.65	-	-	-	-	39.23	26.96	25.89
20-4	15.59	59.0	9.20	8.83	13.07	87.3	11.41	10.95	-	-	-	-	28.66	20.61	19.78
20-5	1.30	34.0	0.44	0.42	12.84	87.2	11.20	10.75	-	-	-	-	14.14	11.64	11.17
20-6	-	-	-	-	11.60	86.5	10.03	9.63	-	-	-	-	11.60	10.03	9.63
20-7	21.33	63.0	13.44	12.90	13.77	87.3	12.02	11.54	0.32	35.0	0.11	0.11	35.42	25.57	24.55
20-8	7.42	51.0	3.78	3.63	8.52	86.6	7.38	7.08	4.45	45.3	2.02	1.94	20.39	13.18	12.65
	2,790.40	74.4	2,076.51	1,993.46	500.53	84.4	422.18	405.30	242.12	67.6	163.56	157.21	3,533.05	2,662.25	2,555.97

TABLE 12

SUFFIELD EVALUATION DRILLING PROGRAM
LOWER CRETACEOUS SALES GAS SUMMARY

	Township Range (W4M)	Productive Area Acres	Net Pay Ft.	Reservoir Acre Feet	Gas in Place BCF	Recoverable Raw Gas BCF	Recoverable Sales Gas BCF
1. BOW ISLAND							
	17-4	6,400	16	102,400	32.05	25.60	24.57
	18-4	5,760	12	69,120	21.63	17.28	16.58
	Total	12,160	14	171,520	53.68	42.88	41.15
2. GLAUCONITIC							
	18-8	10,880	16	174,080	123.59	104.97	100.77
	18-9	3,840	12	46,080	32.71	27.78	26.87
	Total	14,720	15	220,160	156.30	132.75	127.43
	Total Lower Cretaceous	26,880	-	391,680	209.98	175.63	168.58

TABLE 13

SUFFIELD EVALUATION DRILLING PROGRAM
RESERVES SUMMARY
(BCF)

Pool	INDICATED		PROVEN		PROBABLE		POSSIBLE	
	Gas in Place	Sales Gas	Gas in Place	Sales Gas	Gas in Place	Sales Gas	Gas in Place	Sales Gas
MILK RIVER	2790.40	1993.46	2232.30	1594.77	558.10	398.69	-	-
MEDICINE HAT								
Atlee/Buffalo-Medicine Hat	313.42	264.48	250.73	211.58	62.69	52.90	-	-
Medicine Hat B	83.82	70.80	41.91	35.40	41.91	35.40		
Alderson	31.32	21.24	15.66	10.62			15.66	10.62
Jenner	31.90	21.82	15.95	10.91			15.95	10.91
Princess	40.07	26.96	20.03	13.48			20.04	13.48
Total Medicine Hat	500.53	405.30	344.28	281.99	104.60	88.30	51.65	35.01
SECOND WHITE SPECKS								
Alderson	90.65	77.14	67.98	57.86			22.67	19.28
Princess	151.47	80.07	75.73	40.03			75.74	40.04
Total Second White Specks	242.12	157.21	143.71	97.89			98.41	59.32
BOW ISLAND	53.68	41.15	9.60	7.37			44.08	33.78
GLAUCONITE	156.30	127.43	21.81	17.78			134.49	109.65
TOTAL BLOCK	3743.02	2724.55	2751.70	1999.80	662.70	486.99	328.63	237.76

TABLE 14

SUFFIELD EVALUATION DRILLING PROGRAM
COMPARISON SUFFIELD BLOCK RESERVE DETERMINATIONS

Zone	1972 Forecast Sales Gas Reserve BCF		1974 Estimate Sales Gas Reserve BCF		Variance BCF
Milk River	1,855		1,993.46		138.46
Medicine Hat	1,665		405.30		(1,259.7)
Second White Specks	170		157.21		(12.8)
Bow Island	402	)---1.	41.15	)---1.	(233.42)
Glauconitic	-	)	127.43	)	
Total Indicated Reserve	4,092		2,724.55		(1,367.45)
Estimated Proven Reserve-BCF	3,300		2,000		(1,300)
-%	80		73		

1. The Lower Cretaceous are combined for comparison purposes.

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-1-15-6 Location: 6-1-15-6 W4M Elevations: Gr. 2327 K.B. 2335

Stage: 1 Spud Date: 18-8-73 Total Depth: 1388 Formation: Medicine Hat

Production Casing (4½") Set at 1388 Ft. K.B. Production Packer Set at 1059.4 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid; ISF, Rm at 60°-3.73

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	780	984	204
Base- Feet K.B.	984	1080	96
Thickness - Feet	204	96	300
Resistive Feet 10 Ohm-Meter- 16"	143	88	231
Resistive Feet 10 Ohm-Meter- Induction	98	80	178
Resistive Feet 14 Ohm-Meter- 16"	21	14	35
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	796	884	984	1008
Base Interval-Feet KB.	870	920	1004	1070
Gross H- Feet	74	36	20	62
Net h -Induction	9	5	8	21
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 982.5 Ft. K.B. 1352 Ft. SS.

Interval(s): 912, 913, 986, 987, 988, 989, 996, 997, 999, 1001, 1007, 1017, 1019, 1020, 1028, 1029, 1039, 1053

Fracturing: Initial Frac Pressure 1900 psi Rate 20 B/M Final Frac Pressure 1000 psi Rate 45 B/M
Initial SI Pressure 575 psi 15 Min. SIP 575 psi

AOF Potential MCFD: Isochronal - 100 Hour 160 Extended 140 at 189 Hours

Conditions at End of Extended Flow Hours 189 Rate 126 MCFD at 135 psig 3 / 11 / 73
Daily Pressure Decline 2.7 psi Deliverability at 100 psig (WHP) MCFD 130

Pressure Data: SIP Before Test, psig 450 Wellhead Pressure After 189 Hours Buildup 410 psig
Extrapolated Shut-in Pressure- Wellhead psig 450 Formation psia 475
Shut-in Wellhead Pressure Readings-psig 450 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 11.82 KH Fracture MD Ft. (Buildup Data) 47.08

KH from Production Data MD Ft. 38.33 Condition Ratio (KH Prod.) / KH Reservoir 3.24

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 7-14-15-6 Location: 7-14-15-6 W4M Elevations: Gr. 2343 K.B. 2351

Stage: 1 Spud Date: 14-8-73 Total Depth: 1390 Formation: Medicine Hat

Production Casing (4½") Set at 1390 Ft. K.B. Production Packer Set at 1038 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1 : 875 - 895, Core # 2: 945 - 965, Core # 3: 1015 - 1035

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60° - 1.06

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	766	982	216
Base- Feet K.B.	982	1082	100
Thickness - Feet	216	100	316
Resistive Feet 10 Ohm-Meter- 16"	74	84	158
Resistive Feet 10 Ohm-Meter- Induction	74	83	157
Resistive Feet 14 Ohm-Meter- 16"	5	4	9
Saraband Analysis- Thickness-Feet	26	31	57
Porosity -%	13.4	13.0	13.18
Water Saturation-%	75.0	68.9	71.68

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	820	900	982	1006
Base Interval-Feet KB.	890	934	1003	1070
Gross H- Feet	70	34	21	64
Net h -Induction	10	0	8	17
Saraband Analysis				
Gross H - Feet	16	14	19	12
Net h - Feet	12	11	19	11
Ø - %	12.75	12.22	13.54	11.95
SW - %	70.83	71.81	69.73	66.27

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 897 Ft. K.B. 1454 Ft. SS.
Interval(s): 1009, 995, 994, 993, 992, 991, 905, 883, 861, 860, 859, 786, 785

Fracturing: Initial Frac Pressure 3200 psi Rate 29 B/M Final Frac Pressure 1600 psi Rate 42 B/M
Initial SI Pressure 500 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal - 100 Hour 450 Extended 440 at 192.5 Hours

Conditions at End of Extended Flow Hours 192.5 Rate 254 MCFD at 283 psig 12 / 11 / 73
Daily Pressure Decline 3.1 psi Deliverability at 100 psig (WHP) MCFD 410

Pressure Data: SIP Before Test, psig 443 Wellhead Pressure After 115 Hours Buildup 422 psig
Extrapolated Shut-in Pressure- Wellhead psig 443 Formation psia 466
Shut-in Wellhead Pressure Readings-psig 443 at 19 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 55.83 KH Fracture MD Ft. (Buildup Data) 124.88
KH from Production Data MD Ft. 124.84 Condition Ratio (KH Prod.) / KH Reservoir 2.24

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-17-15-6 Location: 6-17-15-6 W4M Elevations: Gr. 2403 K.B. 2411

Stage: 1 Spud Date: 25-7-73 Total Depth: 1453 Formation: Medicine Hat

Production Casing (4½") Set at 1453 Ft. K.B. Production Packer Set at 1202 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60° - 0.62

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	866	1090	224
Base- Feet K.B.	1090	1182	92
Thickness - Feet	224	92	316
Resistive Feet 10 Ohm-Meter- 16"	111	72	183
Resistive Feet 10 Ohm-Meter- Induction	122	72	194
Resistive Feet 14 Ohm-Meter- 16"	5	4	9
Saraband Analysis- Thickness-Feet	25	14	39
Porosity -%	12.35	12.34	12.34
Water Saturation-%	69.88	65.5	68.31

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	920	1005	1090	1121
Base Interval-Feet KB.	990	1036	1106	1165
Gross H- Feet	70	31	16	44
Net h -Induction	14	0	14	13
Saraband Analysis				
Gross H - Feet	19	9	10	4
Net h - Feet	14	8	10	4
ø - %	12.33	12.36	12.09	12.97
SW - %	71.78	72.73	66.30	63.50

Perforations: Size: 3-1/2" Type: Jet No./Foot: 1 Mid Point: 1059.5 Ft. K.B. 1351.5 Ft. SS.

Interval(s): 979 - 984, 1090 - 1097, 1121 - 1125, 1132 - 1134, 1138 - 1140

Fracturing: Initial Frac Pressure 3400 psi Rate 20 B/M Final Frac Pressure 2000 psi Rate 32 B/M

Initial SI Pressure 900 psi 5 Min. SIP 800 psi

AOF Potential MCFD: Isochronal 94 100 Hour 50 Extended 50 at 136.5 Hours

Conditions at End of Extended Flow Hours 136.5 Rate 30 MCFD at 320 psig 26 / 9 / 73

Daily Pressure Decline 0.1 psi Deliverability at 100 psig (WHP) MCFD 3

Pressure Data: SIP Before Test, psig 449 Wellhead Pressure After 119 Hours Buildup 449 psig

Extrapolated Shut-in Pressure- Wellhead psig 449 Formation psia 474

Shut-in Wellhead Pressure Readings-psig 459 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 7.00 KH Fracture MD Ft. (Buildup Data) -

KH from Production Data MD Ft. 17.16 Condition Ratio (KH Prod.) / KH Reservoir 2.45

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-1-15-7 Location: 6-1-15-7 W4M Elevations: Gr. 2380 K.B. 2388

Stage: 1 Spud Date: 23-8-73 Total Depth: 1420 Formation: Medicine Hat

Production Casing (4½") Set at 1420 Ft. K.B. Production Packer Set at 1104.55 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60° -0.61

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	844	1063	219
Base- Feet K.B.	1063	1150	87
Thickness - Feet	219	87	306
Resistive Feet 10 Ohm-Meter- 16"	96	71	167
Resistive Feet 10 Ohm-Meter- Induction	104	69	173
Resistive Feet 14 Ohm-Meter- 16"	4	5	9
Saraband Analysis- Thickness-Feet	88	29	117
Porosity -%	13.65	14.73	13.91
Water Saturation-%	68.52	62.58	67.05

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	891	974	1062	1088
Base Interval-Feet KB.	964	1008	1079	1134
Gross H- Feet	73	34	17	46
Net h -Induction	17	0	12	11
Saraband Analysis				
Gross H - Feet	56	20	15	12
Net h - Feet	54	19	15	12
Ø - %	13.35	14.82	14.22	14.41
SW - %	69.81	70.47	64.60	59.6.

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1013.5 Ft. K.B. 1374.5 Ft. SS.
Interval(s): 930, 931, 931½, 932, 933, 934, 935, 1032, 1066, 1067, 1095, 1096, 1097

Fracturing: Initial Frac Pressure 3500 psi Rate 24 B/M Final Frac Pressure 1400 psi Rate 47 B/M
Initial SI Pressure 400 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal - 100 Hour 27 Extended 24 at 215 Hours

Conditions at End of Extended Flow Hours 215 Rate 22 MCFD at 96 psig 11 / 11 / 73
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 21.5

Pressure Data: SIP Before Test, psig 393 Wellhead Pressure After 143.7 Hours Buildup 302 psig
Extrapolated Shut-in Pressure- Wellhead psig 393 Formation psia 416
Shut-in Wellhead Pressure Readings-psig 399 at 18 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 2.60 KH Fracture MD Ft. (Buildup Data) 18.88
KH from Production Data MD Ft. 8.53 Condition Ratio (KH Prod.) / KH Reservoir 3.2

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-3-15-7 Location: 6-3-15-7 W4M Elevations: Gr. 2396 K.B. 2406

Stage: 2 Spud Date: 16-10-73 Total Depth: 1985 Formation: Second White Specks

Production Casing (4½") Set at 1985 Ft. K.B. Production Packer Set at 1175 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60° -0.51

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	840	1060	220
Base- Feet K.B.	1058	1148	90
Thickness - Feet	220	90	310
Resistive Feet 10 Ohm-Meter- 16"	210	69	279
Resistive Feet 10 Ohm-Meter- Induction	177	54	231
Resistive Feet 14 Ohm-Meter- 16"	41	30	71
Saraband Analysis- Thickness-Feet	14	10	24
Porosity -%	13.50	14.36	13.84
Water Saturation-%	59.21	56.10	57.86

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	890	963	1060	1086
Base Interval-Feet KB.	959	1006	1081	1130
Gross H- Feet	69	43	21	44
Net h -Induction	61	4	10	32
Saraband Analysis				
Gross H - Feet	11	3	5	5
Net h - Feet	11	3	5	5
ø - %	13.44	13.70	14.66	14.06
SW - %	58.18	63.00	61.60	50.60

Perforations: Size: 3-5/8" Type: Jet No./Foot: 1 Mid Point: 1024 Ft. K.B. 1373 Ft. SS.
Interval(s): 1123, 1106, 1091, 1063, 977, 928, 926, 924

Fracturing: Initial Frac Pressure 4000 psi Rate 7 B/M Final Frac Pressure 1500 psi Rate 48 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour 263 Extended 263 at 125 Hours

Conditions at End of Extended Flow Hours 125 Rate 232 MCFD at 139 psig 15 / 2 / 74
Daily Pressure Decline 1.7 psi Deliverability at 100 psig (WHP) MCFD 245

Pressure Data: SIP Before Test, psig 428 Wellhead Pressure After 73 Hours Buildup 383 psig
Extrapolated Shut-in Pressure- Wellhead psig 430 Formation psia 454
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 27.38 KH Fracture MD Ft. (Buildup Data) 76.86
KH from Production Data MD Ft. 79.48 Condition Ratio (KH Prod.) / KH Reservoir = 2.90

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-5-15-7 Location: 6-5-15-7 W4M Elevations: Gr. 2417 K.B. 2425

Stage: 1 Spud Date: 25-8-73 Total Depth: 1448 Formation: Medicine Hat

Production Casing (4½") Set at 1448 Ft. K.B. Production Packer Set at _____ Ft. K.B.

Completed Zones: Milk River Potential Zones: Medicine Hat

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 965 - 985, Core # 2: 1035 - 1055, Core # 3: 1105 - 1125

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F- 0.69

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	847	1070	223
Base- Feet K.B.	1070	1152	82
Thickness - Feet	223	82	305
Resistive Feet 10 Ohm-Meter- 16"	117	72	189
Resistive Feet 10 Ohm-Meter- Induction	110	63	173
Resistive Feet 14 Ohm-Meter- 16"	8	8	16
Saraband Analysis- Thickness-Feet	105	43	148
Porosity -%	13.10	12.26	12.85
Water Saturation-%	68.44	64.70	67.36

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	893	956	1070	1088
Base Interval-Feet KB.	950	999	1083	1136
Gross H- Feet	57	43	13	48
Net h -Induction	19	0	8	0
Saraband Analysis				
Gross H - Feet	57	22	11	26
Net h - Feet	56	21	11	26
ø - %	12.35	12.09	13.13	12.50
SW - %	61.69	67.76	65.09	64.65

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1012 Ft. K.B. 1413 Ft. SS.

Interval(s): 1129, 1114, 1113, 1101, 1075, 1071, 1045, 1006, 991, 985, 979, 960, 951, 937, 934, 933, 931, 919, 895

Fracturing: Initial Frac Pressure 3500 psi Rate 25 B/M Final Frac Pressure 1700 psi Rate 47 B/M

Initial SI Pressure 750 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour 220 Extended 206 at 147 Hours

Conditions at End of Extended Flow Hours 147 Rate 167 MCFD at 179 psig 15 / 1 / 74

Daily Pressure Decline 8 psi Deliverability at 100 psig (WHP) MCFD 190

Pressure Data: SIP Before Test, psig 419 Wellhead Pressure After 93 Hours Buildup 399 psig

Extrapolated Shut-in Pressure- Wellhead psig 430 Formation psia 454

Shut-in Wellhead Pressure Readings-psig 416 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 24.76 KH Fracture MD Ft. (Buildup Data) 57.78

KH from Production Data MD Ft. 61.49 Condition Ratio (KH Prod.) / KH Reservoir 2.48

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-15-15-7 Location: 6-15-15-7 W4M Elevations: Gr. 2337 K.B. 2345

Stage: 1 Spud Date: 18-7-73 Total Depth: 1325 Formation: Medicine Hat

Production Casing (4½") Set at 1324 Ft. K.B. Production Packer Set at 1047 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F - 0.64

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	777	1002	225
Base- Feet K.B.	1002	1090	88
Thickness - Feet	225	88	313
Resistive Feet 10 Ohm-Meter- 16"	144	83	227
Resistive Feet 10 Ohm-Meter- Induction	132	78	210
Resistive Feet 14 Ohm-Meter- 16"	12	10	22
Saraband Analysis- Thickness-Feet	41	17	58
Porosity -%	12.74	12.81	12.76
Water Saturation-%	66.43	56.83	63.61

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	827	910	1002	1023
Base Interval-Feet KB.	897	946	1018	1070
Gross H- Feet	70	36	16	47
Net h -Induction	25	0	14	16
Saraband Analysis				
Gross H - Feet	26	11	10	7
Net h - Feet	24	11	9	7
Ø - %	12.44	13.41	12.73	12.87
SW - %	69.45	59.63	58.55	53.71

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 940 Ft. K.B. 1405 Ft. SS.

Interval(s): 1001 - 1003, 1008 - 1015, 910 - 914, 918 - 922, 865 - 868

Fracturing: Initial Frac Pressure 4000 psi Rate 18 B/M Final Frac Pressure 1800 psi Rate 36 B/M

Initial SI Pressure 1000 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal 1650 100 Hour 424 Extended 424 at 117 Hours

Conditions at End of Extended Flow Hours 117 Rate 246 MCFD at 274 psig 24 / 9 / 73

Daily Pressure Decline 3 psi Deliverability at 100 psig (WHP) MCFD 390

Pressure Data: SIP Before Test, psig 430 Wellhead Pressure After 167.5 Hours Buildup 422 psig

Extrapolated Shut-in Pressure- Wellhead psig 430 Formation psia 453

Shut-in Wellhead Pressure Readings-psig 434 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 20.29 KH Fracture MD Ft. (Buildup Data) 51.62

KH from Production Data MD Ft. 129.30 Condition Ratio (KH Prod.) / KH Reservoir 6.18

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-17-15-7 Location: 6-17-15-7 W4M Elevations: Gr. 2321 K.B. 2331

Stage: 1 Spud Date: 1-9-73 Total Depth: 1909 Formation: Second White Sp[illegible]

Production Casing (4½") Set at 1909 Ft. K.B. Production Packer Set at 1042.93 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1 : 885 - 905, Core # 2: 955 - 975, Core # 3: 1025 - 1045

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: ISF, Rm at 60° F- 0.73

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	771	996	225
Base- Feet K.B.	996	1084	88
Thickness - Feet	225	88	313
Resistive Feet 10 Ohm-Meter- 16"	123	79	202
Resistive Feet 10 Ohm-Meter- Induction	115	70	185
Resistive Feet 14 Ohm-Meter- 16"	4	3	7
Saraband Analysis- Thickness-Feet	50	11	61
Porosity -%	12.83	13.71	12.99
Water Saturation-%	65.60	58.27	64.28

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	819	899	995	1017
Base Interval-Feet KB.	891	938	1011	1067
Gross H- Feet	72	39	16	50
Net h -Induction	17	3	11	18
Saraband Analysis				
Gross H - Feet	26	18	7	4
Net h - Feet	24	18	7	4
ø - %	12.63	12.37	14.75	11.87
SW - %	68.95	60.50	55.85	62.50

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 949 Ft. K.B. 1382 Ft. SS.

Interval(s): 859, 860, 861, 862, 863, 907, 908, 997, 998, 999

Fracturing: Initial Frac Pressure 2800 psi Rate 28 B/M Final Frac Pressure 1300 psi Rate 38 B/M
Initial SI Pressure 400 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal - 100 Hour 183 Extended 183 at 121.7 Hours

Conditions at End of Extended Flow Hours 121.7 Rate 152 MCFD at 165 psig 15 / 11 / 73
Daily Pressure Decline 3.9 psi Deliverability at 100 psig (WHP) MCFD 167

Pressure Data: SIP Before Test, psig 422 Wellhead Pressure After 122 Hours Buildup 402 psig

Extrapolated Shut-in Pressure- Wellhead psig 422 Formation psia 445

Shut-in Wellhead Pressure Readings-psig 426 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 21.10 KH Fracture MD Ft. (Buildup Data) 57.40

KH from Production Data MD Ft. 57.40 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.72

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-27-15-7 Location: 6-27-15-7 W4M Elevations: Gr. 2311 K.B. 2321

Stage: 2 Spud Date: 27-10-73 Total Depth: 2310 Formation: Bow Island

Production Casing (4½") Set at 1876 Ft. K.B. Production Packer Set at 1424.15 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks: DST # 1 - 2200 - 2310, DST # 2 - 1932 - 2010

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F -3.25

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	767	990	223
Base- Feet K.B.	990	1082	92
Thickness - Feet	223	92	315
Resistive Feet 10 Ohm-Meter- 16"	210	92	302
Resistive Feet 10 Ohm-Meter- Induction	140	82	222
Resistive Feet 14 Ohm-Meter- 16"	39	50	89
Saraband Analysis- Thickness-Feet	9	5	14
Porosity -%	13.68	13.66	13.66
Water Saturation-%	66.22	56.40	62.65

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	815	895	990	1012
Base Interval-Feet KB.	890	931	1008	1064
Gross H- Feet	75	36	18	52
Net h -Induction	26	4	14	33
Saraband Analysis				
Gross H - Feet	9	0	1	4
Net h - Feet	9	0	1	4
Ø - %	13.67		12.5	13.95
SW - %	66.22		65	54.25

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 946 Ft. K.B. 1375 Ft. SS

Interval(s): 1039, 1034, 1014, 998, 993, 910, 881, 857, 853

Fracturing: Initial Frac Pressure 3550 psi Rate 22 B/M Final Frac Pressure 1400 psi Rate 48 B/M
Initial SI Pressure 600 psi 15 Min. SIP 500 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 124 at 71 Hours

Conditions at End of Extended Flow Hours 71 Rate 113 MCFD at 118 psig 18 / 3 / 74
Daily Pressure Decline 4.3 psi Deliverability at 100 psig (WHP) MCFD .1

Pressure Data: SIP Before Test, psig 409 Wellhead Pressure After 233 Hours Buildup 413 psig
Extrapolated Shut-in Pressure- Wellhead psig 443 Formation psia 467
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 8.61 KH Fracture MD Ft. (Buildup Data) 59.27
KH from Production Data MD Ft. 35.16 Condition Ratio (KH Prod.) / KH Reservoir 4.08

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-3-15-8 Location: 6-3-15-8 W4M Elevations: Gr. 2349 K.B. 2357

Stage: 1 Spud Date: 29-8-73 Total Depth: 1722 Formation: Medicine Hat

Production Casing (4½") Set at 1722 Ft. K.B. Production Packer Set at 1029.7 Ft. K.B.

Completed Zones: Milk River Potential Zones:

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: ISF, Rm at 60°F - 1.0

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	753	984	231
Base- Feet K.B.	984	1063	79
Thickness - Feet	231	79	310
Resistive Feet 10 Ohm-Meter- 16"	160	69	229
Resistive Feet 10 Ohm-Meter- Induction	107	62	169
Resistive Feet 14 Ohm-Meter- 16"	13	6	19
Saraband Analysis- Thickness-Feet	58	33	91
Porosity -%	12.34	12.63	12.44
Water Saturation-%	72.31	66.06	70.05

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	806	884	984	1002
Base Interval-Feet KB.	880	934	998	1046
Gross H- Feet	74	50	14	44
Net h -Induction	28	0	6	3
Saraband Analysis				
Gross H - Feet	52	27	9	23
Net h - Feet	35	18	9	23
ø - %	12.68	12.35	14.64	12.44
SW - %	73.51	73.77	73.66	67.47

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 898 Ft. K.B. 1459 Ft. SS.
Interval(s): 851, 852, 853, 903, 904, 990, 991, 1025

Fracturing: Initial Frac Pressure 3500 psi Rate 28 B/M Final Frac Pressure 1400 psi Rate 50 B/M
Initial SI Pressure 400 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal - 100 Hour 76 Extended 76 at 190 Hours

Conditions at End of Extended Flow Hours 190 Rate 73 MCFD at 72 psig 14 / 1 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 71

Pressure Data: SIP Before Test, psig 439 Wellhead Pressure After 25.5 Hours Buildup 255 psig
Extrapolated Shut-in Pressure- Wellhead psig 439 Formation psia 462
Shut-in Wellhead Pressure Readings-psig 428 at 18 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 5.12 KH Fracture MD Ft. (Buildup Data) 32.82
KH from Production Data MD Ft. 22.10 Condition Ratio (KH Prod.) / KH Reservoir 4.32

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-13-15-8 Location: 6-13-15-8 W4M Elevations: Gr. 2331 K.B. 2339

Stage: 1 Spud Date: 13-7-73 Total Depth: 1370 Formation: Medicine Hat

Production Casing (4½") Set at 1370 Ft. K.B. Production Packer Set at 1133 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60° - 0.95

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	780	1006	226
Base- Feet K.B.	1006	1083	77
Thickness - Feet	226	77	303
Resistive Feet 10 Ohm-Meter- 16"	157	70	227
Resistive Feet 10 Ohm-Meter- Induction	131	68	199
Resistive Feet 14 Ohm-Meter- 16"	11	11	22
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	829	906	1006	1026
Base Interval-Feet KB.	900	947	1019	1074
Gross H- Feet	71	41	13	48
Net h -Induction	31	3	8	27
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 2 Mid Point: 950 Ft. K.B. 1389 Ft. SS.
Interval(s): 853 - 857, 862- 875, 891 - 898, 906 - 908, 917 - 920, 1012 - 1014, 1044- 1074

Fracturing: Initial Frac Pressure 3700 psi Rate 11 B/M Final Frac Pressure 1400 psi Rate 40 B/M
Initial SI Pressure 500 psi 15 Min. SIP 500 psi

AOF Potential MCFD: Isochronal 640 100 Hour 171 Extended 171 at 141.5 Hours

Conditions at End of Extended Flow Hours 141.5 Rate 107 MCFD at 272 psig 24 / 9 / 73
Daily Pressure Decline 2 psi Deliverability at 100 psig (WHP) MCFD 155

Pressure Data: SIP Before Test, psig 443 Wellhead Pressure After 140.5 Hours Buildup 436 psig
Extrapolated Shut-in Pressure- Wellhead psig 452 Formation psia 476
Shut-in Wellhead Pressure Readings-psig 448 at 19 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 27.30 KH Fracture MD Ft. (Buildup Data) -
KH from Production Data MD Ft. 47.15 Condition Ratio (KH Prod.) / KH Reservoir 1.73

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 7-15-15-8 Location: 7-15-15-8 W4M Elevations: Gr. 2332 K.B. 2342

Stage: 2 Spud Date: 20-10-73 Total Depth: 1930 Formation: Second White Specks

Production Casing (4½") Set at 1917.44 Ft. K.B. Production Packer Set at 1117.98 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 0.36

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	775	998	223
Base- Feet K.B.	998	1080	82
Thickness - Feet	223	82	305
Resistive Feet 10 Ohm-Meter- 16"	186	82	268
Resistive Feet 10 Ohm-Meter- Induction	120	71	191
Resistive Feet 14 Ohm-Meter- 16"	51	32	83
Saraband Analysis- Thickness-Feet	9	16	25
Porosity -%	14.25	14.84	14.63
Water Saturation-%	67.00	57.31	60.80

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	820	898	998	1013
Base Interval-Feet KB.	890	943	1010	1064
Gross H- Feet	70	45	12	51
Net h -Induction	38	2	6	27
Saraband Analysis				
Gross H - Feet	5	4	4	12
Net h - Feet	5	4	4	12
ø - %	13.68	14.97	15.10	14.75
SW - %	67.40	66.50	61.25	56.00

Perforations: Size: 3-5/8" Type: Jet No./Foot: 1 Mid Point: 948 Ft. K.B. 1394 Ft. SS.

Interval(s): 1038, 1036, 1031, 1023, 1017, 917, 910, 872, 862, 858

Fracturing: Initial Frac Pressure 3900 psi Rate 13 B/M Final Frac Pressure 1700 psi Rate 40 B/M
Initial SI Pressure 600 psi 10 Min. SIP 600 psi

AOF Potential MCFD: Isochronal 1050 100 Hour 156 Extended 156 at 95 Hours

Conditions at End of Extended Flow Hours 95 Rate 141 MCFD at 149 psig 12 / 1 / 74
Daily Pressure Decline 3.4 psi Deliverability at 100 psig (WHP) MCFD 148

Pressure Data: SIP Before Test, psig 490 Wellhead Pressure After 168 Hours Buildup 457 psig
Extrapolated Shut-in Pressure- Wellhead psig 490 Formation psia 515
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 7.97 KH Fracture MD Ft. (Buildup Data) 109.76
KH from Production Data MD Ft. 36.55 Condition Ratio (KH Prod.) / KH Reservoir 4.59

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-17-15-8 Location: 6-17-15-8 W4M Elevations: Gr. 2345 K.B. ' '

Stage: 1 Spud Date: 11-7-73 Total Depth: 1380 Formation: Medicine Hat

Production Casing (4½") Set at 1380 Ft. K.B. Production Packer Set at 1076 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: ISF, Rm at 60°F - 2.0

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	780	1004	224
Base- Feet K.B.	1004	1078	74
Thickness - Feet	224	74	298
Resistive Feet 10 Ohm-Meter- 16"	138	67	205
Resistive Feet 10 Ohm-Meter- Induction	118	64	182
Resistive Feet 14 Ohm-Meter- 16"	24	14	38
Saraband Analysis- Thickness-Feet	89	29	118
Porosity -%	13.21	12.73	13.09
Water Saturation-%	65.47	57.72	63.57

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	820	900	1004	1016
Base Interval-Feet KB.	890	941	1014	1065
Gross H- Feet	70	41	10	49
Net h -Induction	38	2	0	22
Saraband Analysis				
Gross H - Feet	43	23	5	23
Net h - Feet	40	23	5	23
ø - %	13.41	13.25	12.82	[illegible]
SW - %	67.25	64.04	59.20	56.86

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 950.5 Ft. K.B. 1402.5 Ft. SS.
Interval(s): 859 - 861, 888 - 889, 917 - 919, 934 - 938, 965 - 966, 1011 - 1012, 1033 - 1034, 1037, 1041 - 1042.

Fracturing: Initial Frac Pressure 3200 psi Rate 25 B/M Final Frac Pressure 1300 psi Rate 40 B/M
Initial SI Pressure 500 psi 5 Min. SIP 520 psi

AOF Potential MCFD: Isochronal 740 100 Hour 136 Extended 136 at 118.5 Hours

Conditions at End of Extended Flow Hours 118.5 Rate 121 MCFD at 129 psig 22 / 9 / 73
Daily Pressure Decline 4 psi Deliverability at 100 psig (WHP) MCFD 125

Pressure Data: SIP Before Test, psig 413 Wellhead Pressure After 184 Hours Buildup 404 psig
Extrapolated Shut-in Pressure- Wellhead psig 420 Formation psia 443
Shut-in Wellhead Pressure Readings-psig 373 at 18 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 18.60 KH Fracture MD Ft. (Buildup Data) -
KH from Production Data MD Ft. 43.07 Condition Ratio (KH Prod.) / KH Reservoir 2.32

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-30-15-8 Location: 6-30-15-8 W4M Elevations: Gr. 2465 K.B. 2475

Stage: 2 Spud Date: 23-10-73 Total Depth: 2070 Formation: Second White Specks

Production Casing (4½") Set at 2055.88 Ft. K.B. Production Packer Set at 1237 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 3.0

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	898	1124	226
Base- Feet K.B.	1124	1208	84
Thickness - Feet	226	84	310
Resistive Feet 10 Ohm-Meter- 16"	199	78	277
Resistive Feet 10 Ohm-Meter- Induction	151	68	219
Resistive Feet 14 Ohm-Meter- 16"	55	31	86
Saraband Analysis- Thickness-Feet	25	17	42
Porosity -%	14.81	17.15	15.74
Water Saturation-%	64.50	50.59	58.82

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	940	1022	1124	1136
Base Interval-Feet KB.	1014	1073	1133	1184
Gross H- Feet	74	51	9	48
Net h -Induction	58	11	4	34
Saraband Analysis				
Gross H - Feet	17	7	0	15
Net h - Feet	17	7	0	15
ø - %	14.14	15.72		17.56
SW - %	66.70	60.71		49.66

Perforations: Size: 3-5/8" Type: Jet No./Foot: 1 Mid Point: 1058 Ft. K.B. 1417 Ft. SS.

Interval(s): 1148, 1145, 1129, 1108, 1043, 1021, 986, 982, 968

Fracturing: Initial Frac Pressure 3250 psi Rate 31 B/M Final Frac Pressure 1750 psi Rate 42 B/M
Initial SI Pressure 900 psi 10 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour 241 Extended 241 at 96 Hours

Conditions at End of Extended Flow Hours 96 Rate 188 MCFD at 205 psig 23 / 1 / 74
Daily Pressure Decline 9.8 psi Deliverability at 100 psig (WHP) MCFD

Pressure Data: SIP Before Test, psig 417 Wellhead Pressure After 120 Hours Buildup 426 psig
Extrapolated Shut-in Pressure- Wellhead psig 455 Formation psia 480
Shut-in Wellhead Pressure Readings-psig at / /

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 17.74 KH Fracture MD Ft. (Buildup Data) 85.67
KH from Production Data MD Ft. 64.28 Condition Ratio (KH Prod. / KH Reservoir) 3.62

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-12-15-9 Location: 6-12-15-9 W4M Elevations: Gr. 2429 K.B. 2439

Stage: 1 Spud Date: 5-9-73 Total Depth: 2065 Formation: Second White Specks

Production Casing (4½") Set at 2065 Ft. K.B. Production Packer Set at 1138 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: ISF, Rm at 60°F - 1.19

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	850	1075	225
Base- Feet K.B.	1075	1152	77
Thickness - Feet	225	77	302
Resistive Feet 10 Ohm-Meter- 16"	70	40	110
Resistive Feet 10 Ohm-Meter- Induction	127	63	190
Resistive Feet 14 Ohm-Meter- 16"	3	1	4
Saraband Analysis- Thickness-Feet	97	38	135
Porosity -%	13.22	13.43	13.28
Water Saturation-%	68.15	55.26	64.52

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	889	975	1075	1092
Base Interval-Feet KB.	967	1020	1088	1136
Gross H- Feet	78	45	13	44
Net h -Induction	41	0	1	20
Saraband Analysis				
Gross H - Feet	59	28	4	34
Net h - Feet	54	26	4	33
ø - %	13.26	13.62	12.62	14.26
SW - %	68.81	64.46	54.75	57.00

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1025 Ft. K.B. 1414 Ft. SS.
Interval(s): 1127, 1123, 1119, 1109, 1098, 1087, 1079, 1015, 1012, 991, 988, 939, 917, 925, 92

Fracturing: Initial Frac Pressure 3600 psi Rate 23 B/M Final Frac Pressure 2200 psi Rate 35 B/M
Initial SI Pressure 900 psi 15 Min. SIP 850 psi

AOF Potential MCFD: Isochronal - 100 Hour 215 Extended 188 at 244 Hours

Conditions at End of Extended Flow Hours 244 Rate 157 MCFD at 166 psig 19 / 1 / 74
Daily Pressure Decline 9.8 psi Deliverability at 100 psig (WHP) MCFD

Pressure Data: SIP Before Test, psig 401 Wellhead Pressure After 244 Hours Buildup 372 psig
Extrapolated Shut-in Pressure- Wellhead psig 427 Formation psia 451
Shut-in Wellhead Pressure Readings-psig 397 at 18 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 18.38 KH Fracture MD Ft. (Buildup Data) 63.77
KH from Production Data MD Ft. 57.05 Condition Ratio (KH Prod.) / KH Reservoir 3.10

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-26-15-9 Location: 6-26-15-9 W4M Elevations: Gr. 2511 K.B. 2519

Stage: 1 Spud Date: 9-7-73 Total Depth: 1530 Formation: Medicine Hat

Production Casing (4½") Set at 1530 Ft. K.B. Production Packer Set at 1258 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid for Milk River B Zone & Med. Hat Formation. ISF, Rm at 60°F -1.16

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	950	1154	204
Base- Feet K.B.	1154	1251	97
Thickness - Feet	204	97	301
Resistive Feet 10 Ohm-Meter- 16"	97	59	156
Resistive Feet 10 Ohm-Meter- Induction	126	63	189
Resistive Feet 14 Ohm-Meter- 16"	29	15	44
Saraband Analysis- Thickness-Feet	50		
Porosity -%	13.04		
Water Saturation-%	65.94		

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	989	1084	1154	1179
Base Interval-Feet KB.	1064	1134	1170	1236
Gross H- Feet	75	50	16	57
Net h -Induction	48	8	0	29
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" 2-1/8" Type: Bullet Jet No./Foot: 1 - 2 Mid Point: 1145 Ft. K.B. 1374 Ft. SS.

Interval(s): 1191 - 1196 (1), 1206 - 1215 (1), 1090 - 1095 (2)

Fracturing: Initial Frac Pressure 4000 psi Rate 10 B/M Final Frac Pressure 2000 psi Rate 32 B/M

Initial SI Pressure 700 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal 1170 100 Hour 180 Extended 180 at 108 Hours

Conditions at End of Extended Flow Hours 108 Rate 67 MCFD at 320 psig 21 / 9 / 73

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 165

Pressure Data: SIP Before Test, psig 392 Wellhead Pressure After 201.5 Hours Buildup 399 psig

Extrapolated Shut-in Pressure- Wellhead psig 403 Formation psia 428

Shut-in Wellhead Pressure Readings-psig 408 at 17 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 16.69 KH Fracture MD Ft. (Buildup Data) 65.89

KH from Production Data MD Ft. 62.33 Condition Ratio (KH Prod.) / KH Reservoir 3.74

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-32-16-5 Location: 6-32-16-5 W4M Elevations: Gr. 2358 K.B. 2366

Stage: 1 Spud Date: 3-8-73 Total Depth: 1517 Formation: Medicine Hat

Production Casing (4½") Set at 1517 Ft. K.B. Production Packer Set at 1225 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F - 4.0

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	920	1137	217
Base- Feet K.B.	1137	1244	107
Thickness - Feet	217	107	324
Resistive Feet 10 Ohm-Meter- 16"	97	98	195
Resistive Feet 10 Ohm-Meter- Induction	105	88	193
Resistive Feet 14 Ohm-Meter- 16"	1	25	26
Saraband Analysis- Thickness-Feet	64	51	115
Porosity -%	14.06	15.29	14.60
Water Saturation-%	55.46	49.13	52.65

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	979	1050	1137	1176
Base Interval-Feet KB.	1044	1096	1165	1220
Gross H- Feet	65	46	28	44
Net h -Induction	6	1	28	42
Saraband Analysis				
Gross H - Feet	23	28	29	17
Net h - Feet	23	28	29	17
ø - %	13.51	14.43	15.99	14.39
SW - %	54.86	57.89	50.51	46.23

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1175 Ft. K.B. 1191 Ft. SS.

Interval(s): 1211, 1205, 1191, 1190, 1171, 1170, 1169, 1152, 1139

Fracturing: Initial Frac Pressure 4000 psi Rate 10 B/M Final Frac Pressure 1700 psi Rate 38 B/M
Initial SI Pressure 600 psi 15 Min. SIP 550 psi

AOF Potential MCFD: Isochronal - 100 Hour 210 Extended 134 at 120 Hours

Conditions at End of Extended Flow Hours 120 Rate 130 MCFD at 71 psig 11 / 2 / 74
Daily Pressure Decline 1 psi Deliverability at 100 psig (WHP) MCFD 125

Pressure Data: SIP Before Test, psig 482 Wellhead Pressure After 96 Hours Buildup 434 psig

Extrapolated Shut-in Pressure- Wellhead psig 486 Formation psia 514

Shut-in Wellhead Pressure Readings-psig 456 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 10.02 KH Fracture MD Ft. (Buildup Data) -

KH from Production Data MD Ft. 31.33 Condition Ratio (KH Prod. / KH Reservoir) 3.13

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-1-16-6 Location: 6-1-16-6 W4M Elevations: Gr. 2344 K.B. 2352

Stage: 1 Spud Date: 31-7-73 Total Depth: 1416 Formation: Medicine Hat

Production Casing (4½") Set at 1416 Ft. K.B. Production Packer Set at 1059.4 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid. ISF, RM at 60° - 2.6

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	816	1031	215
Base- Feet K.B.	1031	1134	103
Thickness - Feet	215	103	318
Resistive Feet 10 Ohm-Meter- 16"	98	92	190
Resistive Feet 10 Ohm-Meter- Induction	116	84	200
Resistive Feet 14 Ohm-Meter- 16"	5	12	17
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	868	942	1031	1064
Base Interval-Feet KB.	932	991	1056	1112
Gross H- Feet	64	49	25	48
Net h -Induction	9	0	23	30
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1023 Ft. K.B. 1329 Ft. SS.
Interval(s): 1090, 1089, 1041, 1036, 1035½, 1034, 1033½, 1033, 1032½, 973, 972, 959, 958, 957, 956½

Fracturing: Initial Frac Pressure 3800 psi Rate 35 B/M Final Frac Pressure 2000 psi Rate 40 B/M
Initial SI Pressure 400 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal 1070 100 Hour 315 Extended 297 at 236.5 Hours

Conditions at End of Extended Flow Hours 236.5 Rate 210 MCFD at 232 psig 23 / 10 / 73
Daily Pressure Decline 2.3 psi Deliverability at 100 psig (WHP) MCFD 280

Pressure Data: SIP Before Test, psig 380 Wellhead Pressure After 92.5 Hours Buildup 389 psig
Extrapolated Shut-in Pressure- Wellhead psig 418 Formation psia 442
Shut-in Wellhead Pressure Readings-psig 488 at 18 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 100.65 KH Fracture MD Ft. (Buildup Data) "
KH from Production Data MD Ft. 98.79 Condition Ratio (KH Prod.) / KH Reservoir .98

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-7-16-6 Location: 6-7-16-6 W4M Elevations: Gr. 2347 K.B. 2355

Stage: 1 Spud Date: 28-7-73 Total Depth: 1419 Formation: Medicine Hat

Production Casing (4½") Set at 1419 Ft. K.B. Production Packer Set at 1111.44 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 0.90

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	842	1060	218
Base- Feet K.B.	1060	1155	95
Thickness - Feet	218	95	313
Resistive Feet 10 Ohm-Meter- 16"	76	83	159
Resistive Feet 10 Ohm-Meter- Induction	99	78	177
Resistive Feet 14 Ohm-Meter- 16"	6	12	18
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	890	973	1060	1082
Base Interval-Feet KB.	964	1022	1079	1135
Gross H- Feet	74	49	19	53
Net h -Induction	12	6	18	33

Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1023.5 Ft. K.B. 1331.5 Ft. SS.

Interval(s): 1077 - 1079, 1103, 1062 - 1068, 979 - 983, 983 - 985

Fracturing: Initial Frac Pressure 4000 psi Rate 20 B/M Final Frac Pressure 2500 psi Rate 22 B/M
Initial SI Pressure 600 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal 590 100 Hour 282 Extended 267 at 258.5 Hours

Conditions at End of Extended Flow Hours 258.5 Rate 207 MCFD at 231 psig 25 / 10 / 73
Daily Pressure Decline 1.5 psi Deliverability at 100 psig (WHP) MCFD 220

Pressure Data: SIP Before Test, psig 448 Wellhead Pressure After 141 Hours Buildup 427 psig
Extrapolated Shut-in Pressure- Wellhead psig 450 Formation psia 475
Shut-in Wellhead Pressure Readings-psig 456 at 19 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 40.28 KH Fracture MD Ft. (Buildup Data) 71.61
KH from Production Data MD Ft. 78.63 Condition Ratio (KH Prod.) / KH Reservoir 1.95

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-33-16-6 Location: 6-33-16-6 W4M Elevations: Gr. 2384 K.B. 2394

Stage: 2 Spud Date: 8-1-74 Total Depth: 2104 Formation: Second White Specks

Production Casing (4½") Set at 2101 Ft. K.B. Production Packer Set at 1429 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 995 - 1015, Core # 2: 1085 - 1105

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 3.50

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	920	1144	224
Base- Feet K.B.	1144	1247	103
Thickness - Feet	224	103	327
Resistive Feet 10 Ohm-Meter- 16"	206	100	306
Resistive Feet 10 Ohm-Meter- Induction	141	78	219
Resistive Feet 14 Ohm-Meter- 16"	16	67	83
Saraband Analysis- Thickness-Feet	87	29	116
Porosity -%	12.75	12.08	12.58
Water Saturation-%	52.72	57.42	53.89

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	972	1060	1147	1171
Base Interval-Feet KB.	1047	1104	1170	1222
Gross H- Feet	75	44	23	51
Net h -Induction	8	8	20	36
Saraband Analysis				
Gross H - Feet	54	28	22	26
Net h - Feet	37	25	17	11
Ø - %	11.78	14.88	13.74	10.59
SW - %	51.27	49.16	58.29	56.27

Perforations: Size: 3-5/8" Type: Jet No./Foot: 1 Mid Point: 1141 Ft. K.B. 1253 Ft. SS.

Interval(s): 1218, 1217, 1158, 1156, 1154, 1152, 1150, 1148, 1064

Fracturing: Initial Frac Pressure 3600 psi Rate 30 B/M Final Frac Pressure 1300psi Rate 45 B/M
Initial SI Pressure 650 psi 15 Min. SIP 550 psi

AOF Potential MCFD: Isochronal - 100 Hour 250 Extended 224 at 124 Hours

Conditions at End of Extended Flow Hours 124 Rate 178 MCFD at 191 psig 17 / 3 / 74
Daily Pressure Decline 16.8 psi Deliverability at 100 psig (WHP) MCFD 207

Pressure Data: SIP Before Test, psig 438 Wellhead Pressure After 262 Hours Buildup 407 psig

Extrapolated Shut-in Pressure- Wellhead psig 438 Formation psia 464

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 57.95 KH Fracture MD Ft. (Buildup Data) 70.03

KH from Production Data MD Ft. 64.76 Condition Ratio (KH Prod.) / KH Reservoir 1.12

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 11-21-16-7 Location: 11-21-16-7 W4M Elevations: Gr. 2573 K.B. 2583

Stage: 2 Spud Date: 29-10-73 Total Depth: 3622 Formation: Mississippian

Production Casing (4½") Set at 2273 Ft. K.B. Production Packer Set at 1878 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks: DST #1: 3165 - 3071, DST #2: 3078 - 3165, DST #3: 3395 - 3622

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 0.46

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1074	1290	216
Base- Feet K.B.	1290	1392	102
Thickness - Feet	216	102	318
Resistive Feet 10 Ohm-Meter- 16"	NR	NR	NR
Resistive Feet 10 Ohm-Meter- Induction	144	79	223
Resistive Feet 14 Ohm-Meter- 16"	NR	NR	NR
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1123	1214	1296	1318
Base Interval-Feet KB.	1195	1255	1312	1370
Gross H- Feet	72	41	16	52
Net h -Induction	22	9	16	35
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-5/8" Type: Jet No./Foot: 1 Mid Point: 1258 Ft. K.B. 1325 Ft. SS.

Interval(s): 1348, 1336, 1322, 1312, 1306, 1302, 1221, 1212, 1171, 1167

Fracturing: Initial Frac Pressure 2700 psi Rate 31 B/M Final Frac Pressure 1600 psi Rate 42 B/M
Initial SI Pressure 400 psi 10 Min. SIP 400 psi

AOF Potential MCFD: Isochronal - 100 Hour 320 Extended 168 at 269 Hours

Conditions at End of Extended Flow Hours 269 Rate 143 MCFD at 153 psig 1 / 3 / 74
Daily Pressure Decline 5.3 psi Deliverability at 100 psig (WHP) MCFD 155

Pressure Data: SIP Before Test, psig 411 Wellhead Pressure After 357 Hours Buildup 405 psig

Extrapolated Shut-in Pressure- Wellhead psig 422 Formation psia 448

Shut-in Wellhead Pressure Readings-psig _____ at _ _/_ _ /

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 21.86 KH Fracture MD Ft. (Buildup Data) 46.87

KH from Production Data MD Ft. 51.39 Condition Ratio (KH Prod.) / KH Reservoir 2.35

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-33-16-7 Location: 6-33-16-7 W4M Elevations: Gr. 2420 K.B. 2428

Stage: 2 Spud Date: 12-2-74 Total Depth: 1463 Formation: Medicine Hat

Production Casing (4½") Set at 1463 Ft. K.B. Production Packer Set at 1214 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 4.00

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	936	1160	2 4
Base- Feet K.B.	1160	1255	95
Thickness - Feet	224	95	319
Resistive Feet 10 Ohm-Meter- 16"	103	192	
Resistive Feet 10 Ohm-Meter- Induction	83	65	148
Resistive Feet 14 Ohm-Meter- 16"	36	59	95
Saraband Analysis- Thickness-Feet	30	17	47
Porosity -%	13.97	14.19	14.03
Water Saturation-%	60.40	59.53	60.03

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	986	1076	1159	1181
Base Interval-Feet KB.	1060	1118	1178	1232
Gross H- Feet	74	42	19	51
Net h -Induction	8	7	13	1
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %	12.91	14.44	14.25	13.33
SW - %	64.70	60.22	59.43	61.0

Perforations: Size: 3-1/8" Type: Bullet No./Foot: 1 Mid Point: 1117 Ft. K.B. 1311 Ft. SS.

Interval(s): 1204 - 1166, 1164 - 1162, 1086 - 1079, 1032 - 1030

Fracturing: Initial Frac Pressure 3000 psi Rate 34 B/M Final Frac Pressure 2400 psi Rate 40 B/M

Initial SI Pressure 900 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour 206 Extended 206 at 92 Hours

Conditions at End of Extended Flow Hours 92 Rate 163 MCFD at 179 psig 27 / 4 / 74

Daily Pressure Decline 9.1 psi Deliverability at 100 psig (WHP) MCFD 190

Pressure Data: SIP Before Test, psig 355 Wellhead Pressure After 24 Hours Buildup 389 psig

Extrapolated Shut-in Pressure- Wellhead psig 410 Formation psia 434

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 51.89

KH from Production Data MD Ft. 67.68 Condition Ratio (KH Prod.) / KH Reservoir -

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-1-16-8 Location: 6-1-16-8 W4M Elevations: Gr. 2558 K.B. 2566

Stage: 1 Spud Date: 16-7-73 Total Depth: 1610 Formation: Medicine Hat

Production Casing (4½") Set at 1610 Ft. K.B. Production Packer Set at 1363 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F - 0.42

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1010	1207	197
Base- Feet K.B.	1207	1321	114
Thickness - Feet	197	114	311
Resistive Feet 10 Ohm-Meter- 16"	142	104	.4[illegible]
Resistive Feet 10 Ohm-Meter- Induction	121	90	211
Resistive Feet 14 Ohm-Meter- 16"	24	17	41
Saraband Analysis- Thickness-Feet	47	22	69
Porosity -%	13.18	14.25	13.52
Water Saturation-%	64.81	53.87	61.32

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1055	1144	1207	1232
Base Interval-Feet KB.	1130	1175	1225	1302
Gross H- Feet	75	31	18	70
Net h -Induction	44	6	2	41
Saraband Analysis				
Gross H - Feet	34	8	3	21
Net h - Feet	33	8	1	21
Ø - %	12.68	15.16	15.30	14.17
SW - %	67.06	52.75	71.00	53.04

Perforations: Size: 3½" 1/2" Type: Jet Bullet No./Foot: 1 -2 Mid Point: 1185.5 Ft. K.B. 1180.5 Ft. SS.

Interval(s): 1096 - 1100 (1), 1152 - 1156(1), 1233 - 1241 (1), 1256(1), 1269 - 1274 (1), Reperf 1233 - 1241 (2), 1252 - 1262 (2), 1268 - 1275 (2)

Fracturing: Initial Frac Pressure 2100 psi Rate 30 B/M Final Frac Pressure 1500 psi Rate 38 B/M
Initial SI Pressure 650 psi 15 Min. SIP 640 psi

AOF Potential MCFD: Isochronal - 100 Hour 242 Extended 242 at 98 Hours

Conditions at End of Extended Flow Hours 98 Rate 122 MCFD at 337 psig 22 / 9 / 73
Daily Pressure Decline 8 psi Deliverability at 100 psig (WHP) MCFD 225

Pressure Data: SIP Before Test, psig 445 Wellhead Pressure After 117.5 Hours Buildup 432 psig
Extrapolated Shut-in Pressure- Wellhead psig 447 Formation psia 473
Shut-in Wellhead Pressure Readings-psig 110 at 26 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 37.76 KH Fracture MD Ft. (Buildup Data) -

KH from Production Data MD Ft. 67.32 Condition Ratio (KH Prod.) / KH Reservoir 1.78

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-9-16-8 Location: 6-9-16-8 W4M Elevations: Gr. 2575 K.B. 2585

Stage: 1 Spud Date: 27-8-73 Total Depth: 2213 Formation: Second White Specks

Production Casing (4½") Set at 2213 Ft. K.B. Production Packer Set at 1347 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid, ISF, Rm at 60°F - 1.55

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1032	1226	194
Base- Feet K.B.	1226	1340	114
Thickness - Feet	194	114	308
Resistive Feet 10 Ohm-Meter- 16"	50	22	72
Resistive Feet 10 Ohm-Meter- Induction	115	60	175
Resistive Feet 14 Ohm-Meter- 16"	5	0	5
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1075	1169	1226	1256
Base Interval-Feet KB.	1147	1200	1248	1320
Gross H- Feet	72	31	22	64
Net h -Induction	30	6	0	16
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1251 Ft. K.B. 1334 Ft. SS.

Interval(s): 1191, 1175, 1113, 1058, 1211, 1243, 1277, 1291, 1303, 1311

Fracturing: Initial Frac Pressure 2600 psi Rate 33 B/M Final Frac Pressure 2000 psi Rate 42 B/M

Initial SI Pressure 700 psi 15 Min. SIP 650 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 491 at 72 Hours

Conditions at End of Extended Flow Hours 72 Rate 273 MCFD at 301 psig 8 / 12 / 73

Daily Pressure Decline 5 psi Deliverability at 100 psig (WHP) MCFD 455

Pressure Data: SIP Before Test, psig 422 Wellhead Pressure After 356 Hours Buildup 456 psig

Extrapolated Shut-in Pressure- Wellhead psig 459 Formation psia 486

Shut-in Wellhead Pressure Readings-psig 456 at 26 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 67.83 KH Fracture MD Ft. (Buildup Data) 101.08

KH from Production Data MD Ft. 129.54 Condition Ratio (KH Prod.) / KH Reservoir 1.91

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-33-16-8 Location: 6-33-16-8 W4M Elevations: Gr. 2546 K.B. 2556

Stage: 1 Spud Date: 18-8-73 Total Depth: 1725 Formation: Medicine Hat

Production Casing (4½") Set at 1725 Ft. K.B. Production Packer Set at 1344 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1085 - 1105, Core # 2: 1155 - 1173, Core # 3: 1225 - 1245

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 9.00

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1126	1344	218
Base- Feet K.B.	1344	1434	90
Thickness - Feet	218	90	308
Resistive Feet 10 Ohm-Meter- 16"	84	68	152
Resistive Feet 10 Ohm-Meter- Induction	102	68	170
Resistive Feet 14 Ohm-Meter- 16"	8	4	12
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

Resistivity Log Analysis 12 Ohm -Meter	A Zone A-1 Interval	A Zone A-2 Interval	B Zone B-1 Interval	B Zone B-2 Interval
Top Interval -Feet KB.	1172	1268	1344	1362
Base Interval-Feet KB.	1246	1296	1359	1415
Gross H- Feet	74	28	15	53
Net h -Induction	24	8	0	18

Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1217.5 Ft. K.B. 1338.5 Ft. SS.
Interval(s): 1132, 1136, 1138, 1140, 1189, 1195, 1211, 1273, 1275, 1303

Fracturing: Initial Frac Pressure 2300 psi Rate 35 B/M Final Frac Pressure 1900 psi Rate 43 B/M
Initial SI Pressure 600 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal - 100 Hour 466 Extended 466 at 97 Hours

Conditions at End of Extended Flow Hours 97 Rate 258 MCFD at 281 psig 3 / 1 / 74
Daily Pressure Decline 8.5 psi Deliverability at 100 psig (WHP) MCFD 430

Pressure Data: SIP Before Test, psig 425 Wellhead Pressure After 381 Hours Buildup 424 psig
Extrapolated Shut-in Pressure- Wellhead psig 427 Formation psia 453
Shut-in Wellhead Pressure Readings-psig 418 at 26 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 34.78 KH Fracture MD Ft. (Buildup Data) 344.30
KH from Production Data MD Ft. 140.16 Condition Ratio (KH Prod.) / KH Reservoir 4.03

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 11-11-16-9 Location: 11-11-16-9 W4M Elevations: Gr. 2442 K.B. ____

Stage: 1 Spud Date: 22-8-73 Total Depth: 2160 Formation: Second White Specks

Production Casing (4½") Set at 2160 Ft. K.B. Production Packer Set at 1288 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1 : 1380 - 1400, Core # 2: 1690 - 1710, Core # 3: 1870 - 1890

DST Intervals - Remarks: ____

Operating Remarks-Drilling: ____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 3.80

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	988	1194	206
Base- Feet K.B.	1194	1296	102
Thickness - Feet	206	102	308
Resistive Feet 10 Ohm-Meter- 16"	91	54	145
Resistive Feet 10 Ohm-Meter- Induction	115	62	177
Resistive Feet 14 Ohm-Meter- 16"	8	1	9
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1031	1108	1194	1215
Base Interval-Feet KB.	1100	1142	1212	1272
Gross H- Feet	69	34	18	57
Net h -Induction	41	8	0	10
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1138.5 Ft. K.B. 1411.5 Ft. SS.

Interval(s): 1012, 1043, 1069, 1131, 1133, 1220, 1225, 1244, 1265

Fracturing: Initial Frac Pressure 2200 psi Rate 40 B/M Final Frac Pressure 1600 psi Rate 40 B/M

Initial SI Pressure 600 psi 15 Min. SIP 550 psi

AOF Potential MCFD: Isochronal - 100 Hour 394 Extended 394 at 144 Hours

Conditions at End of Extended Flow Hours 144 Rate 239 MCFD at 263 psig 2 / 1 / 74

Daily Pressure Decline 6.3 psi Deliverability at 100 psig (WHP) MCFD 360

Pressure Data: SIP Before Test, psig 422 Wellhead Pressure After 239 Hours Buildup 411 psig

Extrapolated Shut-in Pressure- Wellhead psig 428 Formation psia 453

Shut-in Wellhead Pressure Readings-psig 415 at 26 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 30.17 KH Fracture MD Ft. (Buildup Data) 83.29

KH from Production Data MD Ft. 118.22 Condition Ratio (KH Prod.) / KH Reservoir 3.92

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-24-16-9 Location: 6-24-16-9 W4M Elevations: Gr. 2509 K.B. 2519

Stage: 2 Spud Date: 21-10-73 Total Depth: 2555 Formation: Bow Island

Production Casing (4½") Set at 2054 Ft. K.B. Production Packer Set at 1835.25 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks: DST #1: 2390 - 2555

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 2.15

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	947	1155	208
Base- Feet K.B.	1155	1260	105
Thickness - Feet	208	105	313
Resistive Feet 10 Ohm-Meter- 16"	162	100	262
Resistive Feet 10 Ohm-Meter- Induction	162	95	257
Resistive Feet 14 Ohm-Meter- 16"	42	22	64
Saraband Analysis- Thickness-Feet	36	13	49
Porosity -%	14.86	14.58	14.77
Water Saturation-%	59.25	52.92	57.51

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	998	1088	1156	1180
Base Interval-Feet KB.	1066	1130	1176	1238
Gross H- Feet	68	42	20	58
Net h -Induction	60	15	5	48
Saraband Analysis				
Gross H - Feet	19	13	0	13
Net h - Feet	19	13	0	13
Ø - %	14.72	14.22		14.58
SW - %	61.73	58.61		52.92

Perforations: Size: 3-5/8" Type: Jet No./Foot: 1 Mid Point: 1115 Ft. K.B. 1404 Ft. SS.
Interval(s): 1194, 1188, 1182, 1092, 1087, 1041, 1035

Fracturing: Initial Frac Pressure 3900 psi Rate 15 B/M Final Frac Pressure 1200 psi Rate 50 B/M
Initial SI Pressure 950 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour 71 Extended 71 at 98 Hours

Conditions at End of Extended Flow Hours 98 Rate 69 MCFD at 67 psig 26 / 1 / 74
Daily Pressure Decline 2.1 psi Deliverability at 100 psig (WHP) MCFD 66

Pressure Data: SIP Before Test, psig 423 Wellhead Pressure After 192 Hours Buildup 424 psig
Extrapolated Shut-in Pressure- Wellhead psig 440 Formation psia 471
Shut-in Wellhead Pressure Readings-psig ____ at ____/____/ __

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 8.53 KH Fracture MD Ft. (Buildup Data) 16.11
KH from Production Data MD Ft. 20.33 Condition Ratio (KH Prod.) / KH Reservoir 2.38

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-27-16-9 Location: 6-27-16-9 W4M Elevations: Gr. 2526 K.B. 2536

Stage: 1 Spud Date: 1-8-73 Total Depth: 2150 Formation: Second White Specks

Production Casing (4½") Set at 2150 Ft. K.B. Production Packer Set at 1433.49 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 1.85

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1002	1200	198
Base- Feet K.B.	1200	1311	111
Thickness - Feet	198	111	309
Resistive Feet 10 Ohm-Meter- 16"	54	17	71
Resistive Feet 10 Ohm-Meter- Induction	130	74	204
Resistive Feet 14 Ohm-Meter- 16"	6	0	6
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1044	1142	1200	1219
Base Interval-Feet KB.	1120	1184	1216	1287
Gross H- Feet	76	42	16	68
Net h -Induction	40	7	0	16
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1179 Ft. K.B. 1357 Ft. SS.
Interval(s): 1087 - 1091, 1145 - 1148, 1152 - 1153, 1200 - 1202, 1240, 1241, 1271, 1422

Fracturing: Initial Frac Pressure 1800 psi Rate 46 B/M Final Frac Pressure 1200 psi Rate 46 B/M
Initial SI Pressure 400 psi 15 Min. SIP 390 psi

AOF Potential MCFD: Isochronal 900 100 Hour - Extended 265 at 57.7 Hours

Conditions at End of Extended Flow Hours 57.7 Rate 218 MCFD at 170 psig 11 / 10 / 73
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 250

Pressure Data: SIP Before Test, psig 410 Wellhead Pressure After 282 Hours Buildup 408 psig
Extrapolated Shut-in Pressure- Wellhead psig 423 Formation psia 449
Shut-in Wellhead Pressure Readings-psig 426 at 26 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 32.90 KH Fracture MD Ft. (Buildup Data) -

KH from Production Data MD Ft. 81.39 Condition Ratio (KH Prod.) / KH Reservoir 2.47

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-8-17-4 Location: 6-8-17-4 W4M Elevations: Gr. 2402 K.B. 2410

Stage: 1 Spud Date: 1-9-73 Total Depth: 1582 Formation: Medicine Hat

Production Casing (4½") Set at 1582 Ft. K.B. Production Packer Set at 1260 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F - 2.35

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	975	1196	221
Base- Feet K.B.	1196	1318	122
Thickness - Feet	221	122	343
Resistive Feet 10 Ohm-Meter- 16"	151	113	264
Resistive Feet 10 Ohm-Meter- Induction	95	97	192
Resistive Feet 14 Ohm-Meter- 16"	2	34	36
Saraband Analysis- Thickness-Feet	46	56	102
Porosity -%	13.25	13.72	13.50
Water Saturation-%	65.63	61.66	63.45

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1039	1120	1196	1225
Base Interval-Feet KB.	1105	1164	1221	1290
Gross H- Feet	66	44	25	65
Net h -Induction	0	4	22	46
Saraband Analysis				
Gross H - Feet	5	31	24	29
Net h - Feet	3	30	24	29
Ø - %	12.80	13.65	14.56	13.94
SW - %	65.66	62.40	60.87	61.34

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1190 Ft. K.B. 1220 Ft. SS.

Interval(s): 1237, 1231, 1216, 1210, 1203, 1201, 1161 - 1143

Fracturing: Initial Frac Pressure 3700 psi Rate 14 B/M Final Frac Pressure 2000 psi Rate 36 B/M

Initial SI Pressure 700 psi 10 Min. SIP 550 psi

AOF Potential MCFD: Isochronal - 100 Hour 312 Extended 312 at 141 Hours

Conditions at End of Extended Flow Hours 141 Rate 210 MCFD at 231 psig 26 / 11 / 73

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 295

Pressure Data: SIP Before Test, psig 414 Wellhead Pressure After 94.5 Hours Buildup 406 psig

Extrapolated Shut-in Pressure- Wellhead psig 414 Formation psia 440

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 76.26 KH Fracture MD Ft. (Buildup Data) 94.41

KH from Production Data MD Ft. 100.12 Condition Ratio (KH Prod.) / KH Reservoir 1.31

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-28-17-5 Location: 6-28-17-5 W4M Elevations: Gr. 2142 K.B. 2150

Stage: 2 Spud Date: 20-12-73 Total Depth: 1370 Formation: Medicine Hat

Production Casing (4½") Set at 1383 Ft. K.B. Production Packer Set at _____ Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: BP 1017' KB; BP 900' KB; BP 860' KB. Squeeze 489' KB to surface.

-Logging: No Saraband analysis. ISF, Rm at 60°F - 1.67

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	750	980	230
Base- Feet K.B.	980	1090	110
Thickness - Feet	230	110	340
Resistive Feet 10 Ohm-Meter- 16"	NR	NR	NR
Resistive Feet 10 Ohm-Meter- Induction	155	86	241
Resistive Feet 14 Ohm-Meter- 16"	NR	NR	NR
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	811	898	980	1014
Base Interval-Feet KB.	887	950	1009	1060
Gross H- Feet	76	52	29	46
Net h -Induction	8	26	28	40
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 953 Ft. K.B. 1197 Ft. SS.

Interval(s): 989, 988, 987, 986, 985, 984, 943, 942, 917, 916

Fracturing: Initial Frac Pressure 3800 psi Rate 10 B/M Final Frac Pressure 1000 psi Rate 44 B/M
Initial SI Pressure 700 psi 15 Min. SIP 500 psi

AOF Potential MCFD: Isochronal - 100 Hour 356 Extended 356 at 92 Hours

Conditions at End of Extended Flow Hours 92 Rate 239 MCFD at 261 psig 19 / 2 / 74
Daily Pressure Decline 3.0 psi Deliverability at 100 psig (WHP) MCFD 33

Pressure Data: SIP Before Test, psig 443 Wellhead Pressure After 99 Hours Buildup 437 psig

Extrapolated Shut-in Pressure- Wellhead psig 465 Formation psia 489

Shut-in Wellhead Pressure Readings-psig 456.5 at 19 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 23.10 KH Fracture MD Ft. (Buildup Data) 145.59

KH from Production Data MD Ft. 92.92 Condition Ratio (KH Prod.) / KH Reservoir 4.02

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-11-17-6 Location: 6-11-17-6 W4M Elevations: Gr. 2353 K.B. 2361

Stage: 2 Spud Date: 15-2-74 Total Depth: 2110 Formation: Second White Specks

Production Casing (4½") Set at 2085 Ft. K.B. Production Packer Set at 1239.8 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60° F - 0.84

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	930	1164	234
Base- Feet K.B.	1164	1270	106
Thickness - Feet	234	106	340
Resistive Feet 10 Ohm-Meter- 16"	NR	NR	NR
Resistive Feet 10 Ohm-Meter- Induction	127	77	204
Resistive Feet 14 Ohm-Meter- 16"	NR	NR	NR
Saraband Analysis- Thickness-Feet	21	43	64
Porosity -%	12.88	13.72	13.44
Water Saturation-%	69.15	63.33	65.25

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	992	1080	1164	1196
Base Interval-Feet KB.	1060	1137	1187	1240
Gross H- Feet	68	57	23	44
Net h -Induction	7	11	22	31
Saraband Analysis				
Gross H - Feet	2	19	22	15
Net h - Feet	2	16	21	15
Ø - %	13.15	13.02	15.41	11.48
SW - %	76.00	69.62	69.28	57.33

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): 1168 - 1172, 1176 - 1180

Fracturing: Initial Frac Pressure 3300 psi Rate 24 B/M Final Frac Pressure 2700 psi Rate 27 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended 165 at 96 Hours

Conditions at End of Extended Flow Hours 165 Rate 142 MCFD at 161 psig 17 / 6 / 74
Daily Pressure Decline 11.5 psi Deliverability at 100 psig (WHP) MCFD 154

Pressure Data: SIP Before Test, psig 441 Wellhead Pressure After 71 Hours Buildup 393 psig

Extrapolated Shut-in Pressure- Wellhead psig 441 Formation psia 466

Shut-in Wellhead Pressure Readings-psig 441 at 14 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 18.34 KH Fracture MD Ft. (Buildup Data) 38.00

KH from Production Data MD Ft. 46.26 Condition Ratio (KH Prod.) / KH Reservoir 2.52

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-28-17-6 Location: 6-28-17-6 W4M Elevations: Gr. 2510 K.B. 2518

Stage: 2 Spud Date: 6-1-74 Total Depth: 1675 Formation: Medicine Hat

Production Casing (4½") Set at 1687 Ft. K.B. Production Packer Set at 1359 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 1.56

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1092	1326	234
Base- Feet K.B.	1326	1424	98
Thickness - Feet	234	98	332
Resistive Feet 10 Ohm-Meter- 16"	218	99	317
Resistive Feet 10 Ohm-Meter- Induction	107	70	177
Resistive Feet 14 Ohm-Meter- 16"	32	63	95
Saraband Analysis- Thickness-Feet	50	26	76
Porosity -%	14.88	13.58	14.42
Water Saturation-%	60.88	58.39	59.97

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1150	1240	1326	1353
Base Interval-Feet KB.	1221	1300	1349	1400
Gross H- Feet	71	60	23	47
Net h -Induction	0	6	18	12
Saraband Analysis				
Gross H - Feet	0	44	16	9
Net h - Feet	0	44	16	9
ø - %		14.84	13.31	14.07
SW - %		61.20	64.81	52.66

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1298 Ft. K.B. 1220 Ft. SS.

Interval(s): 1336, 1334, 1332, 1331, 1330, 1259, 1265

Fracturing: Initial Frac Pressure 2400 psi Rate 32 B/M Final Frac Pressure 1300 psi Rate 46 B/M
Initial SI Pressure 700 psi 15 Min. SIP 500 psi

AOF Potential MCFD: Isochronal - 100 Hour 500 Extended 496 at 119 Hours

Conditions at End of Extended Flow Hours 119 Rate 271 MCFD at 299 psig 2 / 4 / 74
Daily Pressure Decline 13.8 psi Deliverability at 100 psig (WHP) MCFD 455

Pressure Data: SIP Before Test, psig 451 Wellhead Pressure After 119 Hours Buildup 384 psig

Extrapolated Shut-in Pressure- Wellhead psig 451 Formation psia 479

Shut-in Wellhead Pressure Readings-psig 443.5 at 16 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 54.47 KH Fracture MD Ft. (Buildup Data) 284.3

KH from Production Data MD Ft. 134.19 Condition Ratio (KH Prod.) / KH Reservoir 2.46

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-13-17-7 Location: 6-13-17-7 W4M Elevations: Gr. 2526 K.B. 2536

Stage: 2 Spud Date: 3-1-74 Total Depth: 2160 Formation: Second White Specks

Production Casing (4½") Set at 2160 Ft. K.B. Production Packer Set at 1491.44 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F- 5.31

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1087	1319	232
Base- Feet K.B.	1319	1416	97
Thickness - Feet	232	97	329
Resistive Feet 10 Ohm-Meter- 16"	218	98	316
Resistive Feet 10 Ohm-Meter- Induction	85	70	155
Resistive Feet 14 Ohm-Meter- 16"	20	57	77
Saraband Analysis- Thickness-Feet	75	48	123
Porosity -%	12.83	12.75	12.79
Water Saturation-%	60.99	56.67	[illegible]

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1142	1236	1319	1344
Base Interval-Feet KB.	1215	1294	1340	1392
Gross H- Feet	73	58	21	48
Net h -Induction	0	0	13	10
Saraband Analysis				
Gross H - Feet	62	57	22	38
Net h - Feet	15	44	17	30
Ø - %	11.55	13.27	13.19	12.45
SW - %	65.13	61.11	58.05	53.86

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1324 Ft. K.B. 1212 Ft. SS.
Interval(s): 1385, 1369, 1362, 1331, 1329, 1327, 1325, 1323, 1321, 1263

Fracturing: Initial Frac Pressure 3500 psi Rate 34 B/M Final Frac Pressure 3000psi Rate 39 B/M
Initial SI Pressure 600 psi 10 Min. SIP 600 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 256 at 480 Hours

Conditions at End of Extended Flow Hours 480 Rate 187 MCFD at 201 psig 13 / 3 / 74
Daily Pressure Decline 6 psi Deliverability at 100 psig (WHP) MCFD 235

Pressure Data: SIP Before Test, psig 292 Wellhead Pressure After 84 Hours Buildup 263 psig
Extrapolated Shut-in Pressure- Wellhead psig 400 Formation psia 427
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 286.67
KH from Production Data MD Ft. 86.95 Condition Ratio (KH Prod.) / KH Reservoir

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-28-17-7 Location: 6-28-17-7 W4M Elevations: Gr. 2476 K.B. 2484

Stage: 2 Spud Date: 5-2-74 Total Depth: 1532 Formation: Medicine Hat

Production Casing (4½") Set at 1532 Ft. K.B. Production Packer Set at 1284.48 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: IE, Rm at 60°F - 3.62

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1016	1235	219
Base- Feet K.B.	1235	1342	107
Thickness - Feet	219	107	326
Resistive Feet 10 Ohm-Meter- 16"	192	93	285
Resistive Feet 10 Ohm-Meter- Induction	71	75	146
Resistive Feet 14 Ohm-Meter- 16"	25	34	59
Saraband Analysis- Thickness-Feet	35	5	40
Porosity -%	14.31	13.12	14.16
Water Saturation-%	60.86	60.60	60.83

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1070	1164	1235	1270
Base Interval-Feet KB.	1139	1222	1261	1322
Gross H- Feet	69	58	26	52
Net h -Induction	5	4	4	8
Saraband Analysis				
Gross H - Feet	3	27	6	0
Net h - Feet	3	27	6	0
Ø - %	12.83	14.66	13.28	
SW - %	66.33	60.59	61.00	

Perforations: Size: 3-1/8" Type: Jet No./Foot: 2 Mid Point: 1217 Ft. K.B. 1267 Ft. SS.

Interval(s): 1180 - 1184, 1238 - 1242, 1250 - 1254

Fracturing: Initial Frac Pressure 1900 psi Rate 45 B/M Final Frac Pressure 1300 psi Rate 48 B/M
Initial SI Pressure 700 psi 15 Min. SIP 575 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 147 at 148 Hours

Conditions at End of Extended Flow Hours 148 Rate 131 MCFD at 139 psig 3 / 4 / 74
Daily Pressure Decline 9.9 psi Deliverability at 100 psig (WHP) MCFD 136

Pressure Data: SIP Before Test, psig 399 Wellhead Pressure After 70 Hours Buildup 389 psig

Extrapolated Shut-in Pressure- Wellhead psig 440 Formation psia 466

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 15.6 KH Fracture MD Ft. (Buildup Data) 144.27

KH from Production Data MD Ft. 42.01 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.69

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-13-17-8 Location: 6-13-17-8 W4M Elevations: Gr. 2566 K.B. 2576

Stage: 2 Spud Date: 17-12-73 Total Depth: 2340 Formation: Second White Specks

Production Casing (4½") Set at 2313 Ft. K.B. Production Packer Set at 2073.16 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: IE, Rm at 60°F - 2.40

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1084	1302	218
Base- Feet K.B.	1302	1404	102
Thickness - Feet	218	102	320
Resistive Feet 10 Ohm-Meter- 16"	201	94	295
Resistive Feet 10 Ohm-Meter- Induction	113	63	176
Resistive Feet 14 Ohm-Meter- 16"	36	38	74
Saraband Analysis- Thickness-Feet	96	27	123
Porosity -%	15.76	15.56	15.70
Water Saturation-%	52.46	55.30	53.03

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1033	1230	1302	1328
Base Interval-Feet KB.	1205	1288	1322	1380
Gross H- Feet	172	58	20	52
Net h -Induction	12	5	3	16
Saraband Analysis				
Gross H - Feet	46	36	7	18
Net h - Feet	45	36	7	18
Ø - %	14.27	17.39	16.11	14.71
SW - %	52.91	54.13	56.14	53.88

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1264 Ft. K.B. 1312 Ft. SS.

Interval(s): 1351 - 1354, 1319, 1236 - 1235, 1179 - 1177

Fracturing: Initial Frac Pressure 2900 psi Rate 30 B/M Final Frac Pressure 1700 psi Rate 44 B/M
Initial SI Pressure 800 psi 15 Min. SIP 650 psi

AOF Potential MCFD: Isochronal - 100 Hour 118 Extended 118 at 95 Hours

Conditions at End of Extended Flow Hours 95 Rate 108 MCFD at 114 psig 26 / 4 / 74
Daily Pressure Decline 32 psi Deliverability at 100 psig (WHP) MCFD 110

Pressure Data: SIP Before Test, psig 433 Wellhead Pressure After 24 Hours Buildup 383 psig
Extrapolated Shut-in Pressure- Wellhead psig 433 Formation psia 460
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 7.68 KH Fracture MD Ft. (Buildup Data) 24.74
KH from Production Data MD Ft. 34.40 Condition Ratio (KH Prod. / KH Reservoir) 4.48

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-17-17-8 Location: 6-17-17-8 W4M Elevations: Gr. 2553 K.B. 2561

Stage: 2 Spud Date: 9-2-74 Total Depth: 1690 Formation: Medicine Hat

Production Casing (4½") Set at 1688 Ft. K.B. Production Packer Set at 1357 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1200 - 1220, Core # 2: 1290 - 1310

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: No Saraband analysis. IE, Rm at 60°F, 0.54

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1063	1277	214
Base- Feet K.B.	1277	1374	97
Thickness - Feet	214	97	311
Resistive Feet 10 Ohm-Meter- 16"	207	97	304
Resistive Feet 10 Ohm-Meter- Induction	192	87	279
Resistive Feet 14 Ohm-Meter- 16"	108	78	186
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1104	1201	1277	1303
Base Interval-Feet KB.	1176	1246	1300	1348
Gross H- Feet	72	45	23	45
Net h -Induction	68	18	22	38
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1237 Ft. K.B. 1324 Ft. SS.
Interval(s): 1324, 1323, 1322, 1320, 1283, 1282, 1281, 1280, 1151, 1150

Fracturing: Initial Frac Pressure 3700 psi Rate 18 B/M Final Frac Pressure 1800 psi Rate 49 B/M
Initial SI Pressure 800 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 29 at 149 Hours

Conditions at End of Extended Flow Hours 149 Rate 29 MCFD at 20 psig 6 / 4 / 74
Daily Pressure Decline 12.7 psi Deliverability at 100 psig (WHP) MCFD 27

Pressure Data: SIP Before Test, psig 419 Wellhead Pressure After 141 Hours Buildup 347 psig
Extrapolated Shut-in Pressure- Wellhead psig 419 Formation psia 445
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 5.16 KH Fracture MD Ft. (Buildup Data) 22.57
KH from Production Data MD Ft. 9.07 Condition Ratio (KH Prod.) / KH Reservoir 1.75

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-10-17-9 Location: 6-10-17-9 W4M Elevations: Gr. 2507 K.B. 2517

Stage: 2 Spud Date: 16-10-73 Total Depth: 2900 Formation: Basal Colorado

Production Casing (4½") Set at 2122 Ft. K.B. Production Packer Set at 1835.3 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks: DST # 1 - 2469 - 2504, DST #2 - 2770 - 2900

Operating Remarks-Drilling:

-Logging: IE. Rm at 60°F - 2.0

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	992	1210	218
Base- Feet K.B.	1210	1304	94
Thickness - Feet	218	94	312
Resistive Feet 10 Ohm-Meter- 16"	214	94	308
Resistive Feet 10 Ohm-Meter- Induction	207	90	297
Resistive Feet 14 Ohm-Meter- 16"	62	20	82
Saraband Analysis- Thickness-Feet	42	32	74
Porosity -%	12.02	13.28	12.55
Water Saturation-%	57.26	47.47	52.97

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1036	1136	1210	1230
Base Interval-Feet KB.	1114	1174	1226	1284
Gross H- Feet	78	38	16	54
Net h -Induction	74	38	16	53
Saraband Analysis				
Gross H - Feet	29	29	12	27
Net h - Feet	11	28	9	19
Ø - %	11.72	12.27	15.12	13.02
SW - %	60.81	56.17	46.44	49.36

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1115 Ft. K.B. 1404 Ft. SS.
Interval(s): 1270, 1250, 1221½, 1193, 1160, 1146, 1083

Fracturing: Initial Frac Pressure 3800 psi Rate 17 B/M Final Frac Pressure 2700 psi Rate 38 B/M
Initial SI Pressure 700 psi 10 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour 148 Extended 148 at 98 Hours

Conditions at End of Extended Flow Hours 98 Rate 134 MCFD at 141 psig 27 / 1 / 74
Daily Pressure Decline 5.6 psi Deliverability at 100 psig (WHP) MCFD 140

Pressure Data: SIP Before Test, psig 489 Wellhead Pressure After 191.5 Hours Buildup 461 psig
Extrapolated Shut-in Pressure- Wellhead psig 490 Formation psia 518
Shut-in Wellhead Pressure Readings-psig ____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 8.53 KH Fracture MD Ft. (Buildup Data) 16.11
KH from Production Data MD Ft. 20.33 Condition Ratio (KH Prod.) / KH Reservoir 2.38

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-35-17-9 Location: 6-35-17-9 W4M Elevations: Gr. 2585 K.B. 2595

Stage: 1 Spud Date: 29-7-73 Total Depth: 1638 Formation: Medicine Hat

Production Casing (4½") Set at 1638 Ft. K.B. Production Packer Set at - Ft. K.B.

Completed Zones: Milk River Potential Zones:

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling: Lost perf gun when attempted to complete Medicine Hat.

-Logging: ISF, Rm at 60°F - 2.65

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1074	1300	226
Base- Feet K.B.	1300	1398	98
Thickness - Feet	226	98	324
Resistive Feet 10 Ohm-Meter- 16"	115	69	184
Resistive Feet 10 Ohm-Meter- Induction	139	74	213
Resistive Feet 14 Ohm-Meter- 16"	6	3	9
Saraband Analysis- Thickness-Feet	91	25	116
Porosity -%	14.41	13.61	14.24
Water Saturation-%	66.14	63.28	65.53

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1121	1229	1300	1321
Base Interval-Feet KB.	1204	1276	1315	1378
Gross H- Feet	83	47	15	57
Net h -Induction	16	4	6	14
Saraband Analysis				
Gross H - Feet	31	36	14	11
Net h - Feet	29	34	14	11
Ø - %	13.56	15.75	14.25	12.79
SW - %	67.79	63.02	63.64	62.81

Perforations: Size: 2-1/8" Type: Jet No./Foot: 1 Mid Point: 1255 Ft. K.B. 1340 Ft. SS.
Interval(s): 1235 - 1239, 1243 - 1247, 1257 - 1260, 1262 - 1266, 1271 - 1275

Fracturing: Initial Frac Pressure 2400 psi Rate 34 B/M Final Frac Pressure 1700 psi Rate 38 B/M
Initial SI Pressure 500 psi 15 Min. SIP 450 psi

AOF Potential MCFD: Isochronal 2550 100 Hour 460 Extended 302 at 188 Hours

Conditions at End of Extended Flow Hours 188 Rate 277 MCFD at 105 psig 24 / 10 / 73
Daily Pressure Decline 2 psi Deliverability at 100 psig (WHP) MCFD 280

Pressure Data: SIP Before Test, psig 400 Wellhead Pressure After 118.5 Hours Buildup 329 psig
Extrapolated Shut-in Pressure- Wellhead psig 400 Formation psia 426
Shut-in Wellhead Pressure Readings-psig 415 at 26 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 26.37 KH Fracture MD Ft. (Buildup Data) 217.28
KH from Production Data MD Ft. 108.07 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 4.10

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-10-18-4 Location: 6-10-18-4 W4M Elevations: Gr. 2393 K.B. 2403

Stage: 2 Spud Date: 12-11-73 Total Depth: 3160 Formation: Mississippian

Production Casing (4½") Set at 2371 Ft. K.B. Production Packer Set at 1646 Ft. K.B.

Completed Zones: Bow Island Potential Zones: _____

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: DST # 1 : 2315 - 2334

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. IE, Rm at 60°F - 0.35

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1012	1241	229
Base- Feet K.B.	1241		
Thickness - Feet	229		
Resistive Feet 10 Ohm-Meter- 16"			185
Resistive Feet 10 Ohm-Meter- Induction	78	92	170
Resistive Feet 14 Ohm-Meter- 16"	3	18	21
Saraband Analysis- Thickness-Feet	60	61	121
Porosity -%	18.54	18.70	18.62
Water Saturation-%	55.07	52.28	53.67

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1076	1171	1241	1269
Base Interval-Feet KB.	1144	1214	1262	1335
Gross H- Feet	68	43	21	66
Net h -Induction	0	15	19	34
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-28-18-4 Location: 6-28-18-4 W4M Elevations: Gr. 2253 K.B. 2261

Stage: 1 Spud Date: 5-8-73 Total Depth: 1491 Formation: Medicine Hat

Production Casing (4½") Set at 1491 Ft. K.B. Production Packer Set at 1175 Ft. K.B.

Completed Zones: Milk River Potential Zones:

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: ISF, Rm at 60°F -3.80

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	896	1137	241
Base- Feet K.B.	1137	1265	128
Thickness - Feet	241	128	369
Resistive Feet 10 Ohm-Meter- 16"	74	96	170
Resistive Feet 10 Ohm-Meter- Induction	73	85	158
Resistive Feet 14 Ohm-Meter- 16"	1	16	17
Saraband Analysis- Thickness-Feet	52	36	88
Porosity -%	14.26	14.86	14.50
Water Saturation-%	65.08	64.08	64.67

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	966	1050	1137	1178
Base Interval-Feet KB.	1034	1109	1165	1225
Gross H- Feet	68	59	28	47
Net h -Induction	0	6	26	7
Saraband Analysis				
Gross H - Feet	1	36	28	6
Net h - Feet	1	35	28	5
Ø - %	12.30	15.30	15.25	13.52
SW - %	61.00	65.94	63.57	69.60

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1108 Ft. K.B. 1153 Ft. SS.
Interval(s): 1149, 1146, 1115, 1104, 1099, 1072, 1071, 1067

Fracturing: Initial Frac Pressure 3600 psi Rate 24 B/M Final Frac Pressure 1400 psi Rate 45 B/M
Initial SI Pressure 600 psi 15 Min. SIP 550 psi

AOF Potential MCFD: Isochronal - 100 Hour 635 Extended 635 at 95 Hours

Conditions at End of Extended Flow Hours 95 Rate 294 MCFD at 326 psig 20 / 12 / 73
Daily Pressure Decline 10.5 psi Deliverability at 100 psig (WHP) MCFD 600

Pressure Data: SIP Before Test, psig 450 Wellhead Pressure After 73.5 Hours Buildup 420 psig
Extrapolated Shut-in Pressure- Wellhead psig 450 Formation psia 476
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 114.43 KH Fracture MD Ft. (Buildup Data) -
KH from Production Data MD Ft. 171.72 Condition Ratio (KH Prod. / KH Reservoir) 1.50

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-15-18-5 Location: 6-15-18-5 W4M Elevations: Gr. 2156 K.B. 2164

Stage: 2 Spud Date: 10-12-73 Total Depth: 2020 Formation: Second White Specks

Production Casing (4½") Set at 2017 Ft. K.B. Production Packer Set at _____ Ft. K.B.

Completed Zones: Second White Specks Potential Zones: Medicine Hat

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1350 - 1370, Core #2: 1440 - 1460

DST Intervals - Remarks: _____

Operating Remarks-Drilling: BP at 1100 feet KB. Squeezed Milk River to surface.

-Logging: No Saraband analysis. IE, Rm at 60°F - 0.04

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	796	1020	224
Base- Feet K.B.	1020	1131	111
Thickness - Feet	224	111	335
Resistive Feet 10 Ohm-Meter- 16"	197	109	306
Resistive Feet 10 Ohm-Meter- Induction	41	77	118
Resistive Feet 14 Ohm-Meter- 16"	9	38	47
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	870	938	1020	1055
Base Interval-Feet KB.	923	984	1044	1098
Gross H- Feet	53	46	24	43
Net h -Induction	0	4	19	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 994 Ft. K.B. 1170 Ft. SS.
Interval(s): 1034, 1032, 1028, 1026, 1023, 997, 956, 954

Fracturing: Initial Frac Pressure 3000 psi Rate 32 B/M Final Frac Pressure 1600 psi Rate 36 B/M
Initial SI Pressure 700 psi 15 Min. SIP 650 psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____
Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig
Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____
KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-2-18-6 Location: 6-2-18-6 W4M Elevations: Gr. 2403 K.B. 2413

Stage: 2 Spud Date: 1-11-73 Total Depth: 2573 Formation: Bow Island

Production Casing (4½") Set at 2134 Ft. K.B. Production Packer Set at 1427.28 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. IE, Rm at 60°F - 0.26

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1006	1240	234
Base- Feet K.B.	1240	1348	108
Thickness - Feet	234	108	342
Resistive Feet 10 Ohm-Meter- 16"	218	97	315
Resistive Feet 10 Ohm-Meter- Induction	117	71	188
Resistive Feet 14 Ohm-Meter- 16"	5	11	16
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1066	1156	1240	1279
Base Interval-Feet KB.	1145	1212	1266	1313
Gross H- Feet	79	56	26	34
Net h -Induction	5	15	21	21
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %				
SW - %				

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1235 Ft. K.B. 1178 Ft. SS.

Interval(s): 1068, 1078, 1249, 1243, 1242, 1241, 1187, 1178, 1171

Fracturing: Initial Frac Pressure 3400 psi Rate 24 B/M Final Frac Pressure 1300 psi Rate 48 B/M
Initial SI Pressure 800 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 454 at 264.5 Hours

Conditions at End of Extended Flow Hours 264.5 Rate 259 MCFD at 284 psig 1 / 3 / 74
Daily Pressure Decline 4.6 psi Deliverability at 100 psig (WHP) MCFD 435

Pressure Data: SIP Before Test, psig 429 Wellhead Pressure After 166 Hours Buildup 421 psig
Extrapolated Shut-in Pressure- Wellhead psig 441 Formation psia 468
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 57.54 KH Fracture MD Ft. (Buildup Data) 128.71
KH from Production Data MD Ft. 128.65 Condition Ratio (KH Prod. / KH Reservoir) 2.24

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-28-18-6 Location: 6-28-18-6 W4M Elevations: Gr. 2571 K.B. 2579

Stage: 2 Spud Date: 10-1-74 Total Depth: 2318 Formation: Second White Specks

Production Casing (4½") Set at 2318 Ft. K.B. Production Packer Set at 2180.63 Ft. K.B.

Completed Zones: Second White Specks Potential Zones: Milk River

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: No Saraband analysis to date. IE, Rm at 60° F - 3.87

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1204	1423	219
Base- Feet K.B.	1423	1546	123
Thickness - Feet	219	123	342
Resistive Feet 10 Ohm-Meter- 16"	194	102	296
Resistive Feet 10 Ohm-Meter- Induction	53	73	126
Resistive Feet 14 Ohm-Meter- 16"	0	17	17
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1264	1355	1423	1463
Base Interval-Feet KB.	1340	1410	1460	1518
Gross H- Feet	76	55	37	55
Net h -Induction	0	0	3	6
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/___
Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-12-18-7 Location: 6-12-18-7 W4M Elevations: Gr. 2557 K.B. 2565

Stage: 2 Spud Date: 22-1-74 Total Depth: 1718 Formation: Medicine Hat

Production Casing (4½") Set at 1718 Ft. K.B. Production Packer Set at - Ft. K.B.

Completed Zones: Milk River Potential Zones:

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1225 - 1245, Core #2: 1315 - 1335

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 2.80

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1140	1360	220
Base- Feet K.B.	1360	1478	118
Thickness - Feet	220	118	338
Resistive Feet 10 Ohm-Meter- 16"	210	110	320
Resistive Feet 10 Ohm-Meter- Induction	51	61	112
Resistive Feet 14 Ohm-Meter- 16"	44	63	107
Saraband Analysis- Thickness-Feet	57	31	88
Porosity -%	16.04	15.86	15.97
Water Saturation-%	58.09	65.52	60.71

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1196	1292	1360	1399
Base Interval-Feet KB.	1270	1346	1392	1448
Gross H- Feet	74	54	32	49
Net h -Induction	0	0	2	0
Saraband Analysis				
Gross H - Feet	28	34	11	2
Net h - Feet	28	34	11	1
Ø - %	15.73	16.40	14.20	12.40
SW - %	53.96	63.55	68.81	74.00

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1313 Ft. K.B. 1252 Ft. SS.
Interval(s): 1240 - 1246, 1276 - 1280, 1308 - 1314, 1382 - 1386

Fracturing: Initial Frac Pressure 3700 psi Rate 23 B/M Final Frac Pressure 1900 psi Rate 42 B/M
Initial SI Pressure 850 psi 10 Min. SIP 650 psi

AOF Potential MCFD: Isochronal - 100 Hour 199 Extended 199 at 92 Hours

Conditions at End of Extended Flow Hours 92 Rate 161 MCFD at 172 psig 1 / 4 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 183

Pressure Data: SIP Before Test, psig 407 Wellhead Pressure After 92 Hours Buildup 371 psig
Extrapolated Shut-in Pressure- Wellhead psig 410 Formation psia 437
Shut-in Wellhead Pressure Readings-psig 420.3 at 16 / 6 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 12.97 KH Fracture MD Ft. (Buildup Data) 285.90
KH from Production Data MD Ft. 64.68 Condition Ratio (KH Prod.) / KH Reservoir 4.98

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-21-18-7 Location: 6-21-18-7 W4M Elevations: Gr. 2533 K.B. 2541

Stage: 2 Spud Date: 29-1-74 Total Depth: 1728 Formation: Medicine Hat

Production Casing (4½") Set at 1725 Ft. K.B. Production Packer Set at 1413.4 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: IE, Rm at 60°F - 2.23

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1120	1346	226
Base- Feet K.B.	1346	1462	116
Thickness - Feet	226	116	342
Resistive Feet 10 Ohm-Meter- 16"	214	110	324
Resistive Feet 10 Ohm-Meter- Induction	91	77	168
Resistive Feet 14 Ohm-Meter- 16"	31	52	83
Saraband Analysis- Thickness-Feet	17	23	40
Porosity -%	14.74	14.06	14.35
Water Saturation-%	71.65	70.91	71.22

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1179	1272	1346	1359
Base Interval-Feet KB.	1253	1334	1356	1433
Gross H- Feet	74	62	10	74
Net h -Induction	0	8	5	16
Saraband Analysis				
Gross H - Feet	7	25	7	24
Net h - Feet	2	15	2	19
ø - %	13.90	14.85	14.05	14.81
SW - %	72.50	71.53	74.50	70.26

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1322 Ft. K.B. 1219 Ft. SS.

Interval(s): 1293, 1294, 1295, 1296, 1303, 1305, 1348, 1349, 1350, 1351

Fracturing: Initial Frac Pressure 2700 psi Rate 33 B/M Final Frac Pressure 1800 psi Rate 49 B/M
Initial SI Pressure 700 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal - 100 Hour 153 Extended 153 at 100 Hours

Conditions at End of Extended Flow Hours 100 Rate 135 MCFD at 145 psig 25 / 4 / 74
Daily Pressure Decline 50.4 psi Deliverability at 100 psig (WHP) MCFD 143

Pressure Data: SIP Before Test, psig 449 Wellhead Pressure After 20 Hours Buildup 376 psig
Extrapolated Shut-in Pressure- Wellhead psig 449 Formation psia 477
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 42.26
KH from Production Data MD Ft. 41.6 Condition Ratio (KH Prod.) / KH Reservoir -

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-4-18-8 Location: 6-4-18-8 W4M Elevations: Gr. 2557 K.B. 2567

Stage: 2 Spud Date: 14-12-73 Total Depth: 2320 Formation: Second White Specks

Production Casing (4½") Set at 2317 Ft. K.B. Production Packer Set at 1383 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 2.75

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1090	1310	220
Base- Feet K.B.	1310	1406	96
Thickness - Feet	220	96	316
Resistive Feet 10 Ohm-Meter- 16"	105	75	180
Resistive Feet 10 Ohm-Meter- Induction	47	54	101
Resistive Feet 14 Ohm-Meter- 16"	0	1	1
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1136	1238	1310	1335
Base Interval-Feet KB.	1214	1285	1329	1390
Gross H- Feet	78	47	19	55
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1301 Ft. K.B. 1266 Ft. SS.

Interval(s): 1354, 1352, 1350, 1315, 1314, 1313, 1250, 1249, 1248, 1247

Fracturing: Initial Frac Pressure 3600 psi Rate 18 B/M Final Frac Pressure 1500 psi Rate 44 B/M
Initial SI Pressure 700 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 609 at 66 Hours

Conditions at End of Extended Flow Hours 66 Rate 262 MCFD at 289 psig 3 / 4 / 74
Daily Pressure Decline 22 psi Deliverability at 100 psig (WHP) MCFD 550

Pressure Data: SIP Before Test, psig 375 Wellhead Pressure After 50 Hours Buildup 369 psig
Extrapolated Shut-in Pressure- Wellhead psig 387 Formation psia 413
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 182.27
KH from Production Data MD Ft. 221.60 Condition Ratio (KH Prod.) / KH Reservoir -

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-19-18-8 Location: 6-19-18-8 W4M Elevations: Gr. 2615 K.B. 2625

Stage: 2 Spud Date: 20-1-74 Total Depth: 3420 Formation: Mississippian

Production Casing (4½") Set at 3420 Ft. K.B. Production Packer Set at 3211.6 Ft. K.B.

Completed Zones: Glauconite Potential Zones: _____

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. IE, RM at 60°F -2.00

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1168	1390	222
Base- Feet K.B.	1390	1480	90
Thickness - Feet	222	90	312
Resistive Feet 10 Ohm-Meter- 16"	204	67	271
Resistive Feet 10 Ohm-Meter- Induction	62	32	94
Resistive Feet 14 Ohm-Meter- 16"	8	2	10
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1217	1309	1390	1420
Base Interval-Feet KB.	1299	1360	1404	1460
Gross H- Feet	82	51	14	40
Net h -Induction	0	0	3	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-23-18-8 Location: 6-23-18-8 W4M Elevations: Gr. 2575 K.B. 2583

Stage: 2 Spud Date: 6-12-73 Total Depth: 2345 Formation: Second White Specks

Production Casing (4½") Set at 2345 Ft. K.B. Production Packer Set at 1460 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: IE, Rm at 60°F - 1.25

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1140	1367	227
Base- Feet K.B.	1367	1473	106
Thickness - Feet	227	106	333
Resistive Feet 10 Ohm-Meter- 16"	220	105	325
Resistive Feet 10 Ohm-Meter- Induction	42	44	86
Resistive Feet 14 Ohm-Meter- 16"	54	41	95
Saraband Analysis- Thickness-Feet	25	12	37
Porosity -%	14.92	15.40	15.06
Water Saturation-%	64.36	63.67	64.07

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1194	1290	1367	1399
Base Interval-Feet KB.	1272	1333	1394	1438
Gross H- Feet	78	43	27	39
Net h -Induction	0	0	2	0
Saraband Analysis				
Gross H - Feet	0	21	11	1
Net h - Feet	0	21	11	1
Ø - %		14.90	13.72	14.50
SW - %		65.14	64.36	56.00

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1365 Ft. K.B. 1218 Ft. SS.

Interval(s): 1416 - 1419, 1370 - 1374, 1311 - 1313

Fracturing: Initial Frac Pressure 2700 psi Rate 35 B/M Final Frac Pressure 2000 psi Rate 46 B/M
Initial SI Pressure 1500 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour 138 Extended 138 at 308 Hours

Conditions at End of Extended Flow Hours 308 Rate 60.5 MCFD at 305 psig 15 / 4 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 128

Pressure Data: SIP Before Test, psig 332 Wellhead Pressure After 28 Hours Buildup 346 psig
Extrapolated Shut-in Pressure- Wellhead psig 410 Formation psia 437
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 94.14
KH from Production Data MD Ft. 43.52 Condition Ratio (KH Prod.) / KH Reservoir -

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-23-18-9 Location: 6-23-18-9 W4M Elevations: Gr. 2544 K.B. 2554

Stage: 2 Spud Date: 2-12-73 Total Depth: 2290 Formation: Second White Specks

Production Casing (4½") Set at 2286 Ft. K.B. Production Packer Set at 1546.8 Ft. K.B.

Completed Zones: Medicine Hat & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F- 1.93

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1072	1284	212
Base- Feet K.B.	1284	1397	113
Thickness - Feet	212	113	325
Resistive Feet 10 Ohm-Meter- 16"	76	42	118
Resistive Feet 10 Ohm-Meter- Induction	36	12	48
Resistive Feet 14 Ohm-Meter- 16"	3	0	3
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1122	1224	1284	1313
Base Interval-Feet KB.	1204	1262	1306	1365
Gross H- Feet	82	38	22	52
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-35-18-9 Location: 6-35-18-9 W4M Elevations: Gr. 2601 K.B. 2611

Stage: 2 Spud Date: 22-11-73 Total Depth: 3026 Formation: Basal Colorado

Production Casing (4½") Set at 2238 Ft. K.B. Production Packer Set at 1352.3 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: DST # 1 - 2885 - 2900, DST #2 - 2880 - 2900

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 0.68

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1140	1352	206
Base- Feet K.B.	1346	1466	114
Thickness - Feet	206	114	320
Resistive Feet 10 Ohm-Meter- 16"	76	58	134
Resistive Feet 10 Ohm-Meter- Induction	25	29	54
Resistive Feet 14 Ohm-Meter- 16"	11	5	16
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1190	1270	1352	1377
Base Interval-Feet KB.	1270	1330	1373	1430
Gross H- Feet	80	60	21	53
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-1/8" Type: Jet No./Foot: 2 Mid Point: 1275 Ft. K.B. 1335 Ft. SS.

Interval(s): 1311 - 1313, 1282 - 1286, 1238 - 1242

Fracturing: Initial Frac Pressure 3400 psi Rate 17 B/M Final Frac Pressure 1600 psi Rate 32 B/M
Initial SI Pressure 900 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour 230 Extended 240 at 90.5 Hours

Conditions at End of Extended Flow Hours 90.5 Rate 188 MCFD at 210 psig 26 / 4 / 74
Daily Pressure Decline 18 psi Deliverability at 100 psig (WHP) MCFD 223

Pressure Data: SIP Before Test, psig 412 Wellhead Pressure After 23 Hours Buildup 342 psig
Extrapolated Shut-in Pressure- Wellhead psig [illegible] Formation psia 461
Shut-in Wellhead Pressure Readings-psig _____ at ___/___/___

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 16.16 KH Fracture MD Ft. (Buildup Data) 53.53
KH from Production Data MD Ft. 70.57 Condition Ratio (KH Prod.) / KH Reservoir 4.37

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 10-17-19-3 Location: 10-17-19-3 W4M Elevations: Gr. 2276 K.B. 2284

Stage: 1 Spud Date: 7-8-73 Total Depth: 1547 Formation: Medicine Hat

Production Casing (4½") Set at 1547 Ft. K.B. Production Packer Set at 1296.6 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 /74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: ISF, Rm at 60°F - 3.25

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	984	1220	236
Base- Feet K.B.	1220	1318	98
Thickness - Feet	236	98	334
Resistive Feet 10 Ohm-Meter- 16"	42	80	[illegible]
Resistive Feet 10 Ohm-Meter- Induction	23	72	95
Resistive Feet 14 Ohm-Meter- 16"	5	4	9
Saraband Analysis- Thickness-Feet	16	29	45
Porosity -%	15.09	14.37	14.62
Water Saturation-%	69.19	66.31	67.34

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1053	1130	1219	[illegible]
Base Interval-Feet KB.	1117	1184	1250	1325
Gross H- Feet	64	54	31	67
Net h -Induction	0	0	18	0
Saraband Analysis				
Gross H - Feet	0	14	28	7
Net h - Feet	0	8	26	4
Ø - %		16.85	15.07	13.05
SW - %		68.37	65.73	7

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1223 Ft. K.B. 1060 Ft. SS.

Interval(s): 1290, 1245, 1240, 1234, 1230, 1221, 1197, 1192, 1177, 1156

Fracturing: Initial Frac Pressure 3900 psi Rate 10 B/M Final Frac Pressure 1800 psi Rate 41 B/M
Initial SI Pressure 700 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour 215 Extended 215 at 92 Hours

Conditions at End of Extended Flow Hours 92 Rate 179 MCFD at 195 psig 23 / 4 / 74
Daily Pressure Decline 64 psi Deliverability at 100 psig (WHP) MCFD 200

Pressure Data: SIP Before Test, psig 494 Wellhead Pressure After 48 Hours Buildup 434 psig

Extrapolated Shut-in Pressure- Wellhead psig 494 Formation psia 522

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 18.27 KH Fracture MD Ft. (Buildup Data) 138.59

KH from Production Data MD Ft. 48.38 Condition Ratio (KH Prod. / KH Reservoir) 2.64

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-16-19-4 Location: 6-16-19-4 W4M Elevations: Gr. 2166 K.B. 2174

Stage: 1 Spud Date: 10-8-73 Total Depth: 1486 Formation: Medicine Hat

Production Casing (4½") Set at 1486 Ft. K.B. Production Packer Set at 1073 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core #1: 990 - 1010, Core #2: 1060 - 1080, Core #3: 1130 - 1150

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: ISF, Rm at 60°F - 1.52

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	804	1052	248
Base- Feet K.B.	1052	1176	124
Thickness - Feet	248	124	372
Resistive Feet 10 Ohm-Meter- 16"	25	74	99
Resistive Feet 10 Ohm-Meter- Induction	43	74	117
Resistive Feet 14 Ohm-Meter- 16"	5	11	16
Saraband Analysis- Thickness-Feet	22	19	41
Porosity -%	14.27	13.66	13.98
Water Saturation-%	63.55	66.37	64.86

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	874	960	1052	1090
Base Interval-Feet KB.	942	1014	1074	1167
Gross H- Feet	68	54	22	77
Net h -Induction	0	3	21	0
Saraband Analysis				
Gross H - Feet	0	15	16	2
Net h - Feet	0	15	16	
Ø - %		14.88	14.06	11.50
SW - %		62.26	66.18	67.50

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1022 Ft. K.B. 1152 Ft. SS.
Interval(s): 1063, 1061, 1059, 1057, 1034, 985, 983, 981

Fracturing: Initial Frac Pressure 4000 psi Rate 18 B/M Final Frac Pressure 2500 psi Rate 42 B/M
Initial SI Pressure 600 psi 15 Min. SIP 450 psi

AOF Potential MCFD: Isochronal - 100 Hour 1136 Extended 1136 at 95 Hours

Conditions at End of Extended Flow Hours 95 Rate 338 MCFD at 379 psig 7 / 12 /
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 570

Pressure Data: SIP Before Test, psig 455 Wellhead Pressure After 48 Hours Buildup 434 psig
Extrapolated Shut-in Pressure- Wellhead psig 455 Formation psia 480
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 105.25 KH Fracture MD Ft. (Buildup Data)
KH from Production Data MD Ft. 302.68 Condition Ratio (KH Prod.) / KH Reservoir 2.87

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-34-19-4 Location: 6-34-19-4 W4M Elevations: Gr. 2127 K.B. 2135

Stage: 2 Spud Date: 31-10-73 Total Depth: 1429 Formation: Medicine Hat

Production Casing (4½") Set at 1429 Ft. K.B. Production Packer Set at _____ Ft. K.B.

Completed Zones: Medicine Hat Potential Zones: Milk River

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F - 1.65

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	808	1053	245
Base- Feet K.B.	1053	1180	127
Thickness - Feet	245	127	372
Resistive Feet 10 Ohm-Meter- 16"	56	82	138
Resistive Feet 10 Ohm-Meter- Induction	16	60	76
Resistive Feet 14 Ohm-Meter- 16"	0	10	10
Saraband Analysis- Thickness-Feet	18	14	32
Porosity -%	15.51	15.81	15.64
Water Saturation-%	74.67	73.50	74.15

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	880	968	1053	1089
Base Interval-Feet KB.	950	1018	1082	1160
Gross H- Feet	70	50	29	71
Net h -Induction	0	0	14	0
Saraband Analysis				
Gross H - Feet	0	23	18	0
Net h - Feet	0	13	14	0
Ø - %	0	15.82	15.70	0
SW - %	_____	74.69	79.14	0

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-16-19-5 Location: 6-16-19-5 W4M Elevations: Gr. 2460 K.B. 2468

Stage: 2 Spud Date: 8-12-73 Total Depth: 1720 Formation: Medicine Hat

Production Casing (4½") Set at 1720 Ft. K.B. Production Packer Set at 1420 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F - 0.39

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1127	1373	246
Base- Feet K.B.	1373	1485	112
Thickness - Feet	246	112	358
Resistive Feet 10 Ohm-Meter- 16"	122	81	203
Resistive Feet 10 Ohm-Meter- Induction	7	20	27
Resistive Feet 14 Ohm-Meter- 16"	11	35	46
Saraband Analysis- Thickness-Feet	43	15	58
Porosity -%	15.44	15.65	15.49
Water Saturation-%	73.91	74.00	73.94

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1202	1280	1373	1400
Base Interval-Feet KB.	1260	1335	1393	1460
Gross H- Feet	58	55	20	60
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet	13	36	17	4
Net h - Feet	7	22	13	2
Ø - %	14.78	15.75	15.72	15.15
SW - %	75.14	72.91	73.85	75.00

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1384 Ft. K.B. 1084 Ft. SS.

Interval(s): 1414, 1408, 1406, 1404, 1402, 1485, 1380, 1379, 1354

Fracturing: Initial Frac Pressure 3400 psi Rate 32 B/M Final Frac Pressure 1900 psi Rate 52 B/M
Initial SI Pressure 800 psi 15 Min. SIP 675 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 20.8 at 288.7 Hours

Conditions at End of Extended Flow Hours 288.7 Rate 20 MCFD at 93 psig 8 / 3 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 19

Pressure Data: SIP Before Test, psig 445 Wellhead Pressure After 500 Hours Buildup 443 psig

Extrapolated Shut-in Pressure- Wellhead psig 468 Formation psia 498

Shut-in Wellhead Pressure Readings-psig 455 at 18 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 1.61 KH Fracture MD Ft. (Buildup Data) 3.62

KH from Production Data MD Ft. 5.16 Condition Ratio (KH Prod. / KH Reservoir) 3.20

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-32-19-5 Location: 6-32-19-5 W4M Elevations: Gr. 2557 K.B. 2565

Stage: 2 Spud Date: 5-12-73 Total Depth: 1790 Formation: Medicine Hat

Production Casing (4½") Set at 1782 Ft. K.B. Production Packer Set at 1527 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis questionable for Milk River, ISF Rm at 60°F - 0.25

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1220	1459	224
Base- Feet K.B.	1444	1560	101
Thickness - Feet	224	101	325
Resistive Feet 10 Ohm-Meter- 16"	84	61	145
Resistive Feet 10 Ohm-Meter- Induction	0	22	22
Resistive Feet 14 Ohm-Meter- 16"	10	15	25
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1288	1373	1459	1494
Base Interval-Feet KB.	1359	1430	1483	1560
Gross H- Feet	71	57	24	66
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet	14	31	17	10
Net h - Feet	14	31	10	7
Ø - %	13.30	15.66	15.65	12.74
SW - %	72.50	71.51	73.50	68.71

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1485 Ft. K.B. 1084 Ft. SS.

Interval(s): 1520, 1518, 1508, 1503, 1477, 1465, 1459, 1449

Fracturing: Initial Frac Pressure 3400 psi Rate 26 B/M Final Frac Pressure 1700 psi Rate 48 B/M
Initial SI Pressure 900 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 6.5 at 788 Hours

Conditions at End of Extended Flow Hours 788 Rate 6.4 MCFD at 21 psig 29 / 3 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 6.1

Pressure Data: SIP Before Test, psig 426 Wellhead Pressure After 24 Hours Buildup 113 psig

Extrapolated Shut-in Pressure- Wellhead psig 426 Formation psia 455

Shut-in Wellhead Pressure Readings-psig 387.0 at 18 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 0.50 KH Fracture MD Ft. (Buildup Data) 15.51

KH from Production Data MD Ft. 2.08 Condition Ratio (KH Prod.) / KH Reservoir 4.16

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-36-19-5 Location: 6-36-19-5 W4M Elevations: Gr. 2359 K.B. 2367

Stage: 2 Spud Date: 14-11-73 Total Depth: 1687 Formation: Medicine Hat

Production Casing (4½") Set at 1667 Ft. K.B. Production Packer Set at 1264 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. IE, Rm at 60°F - 0.82

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1042	1298	252
Base- Feet K.B.	1294	1411	113
Thickness - Feet	252	113	365
Resistive Feet 10 Ohm-Meter- 16"	18	46	64
Resistive Feet 10 Ohm-Meter- Induction	42	47	89
Resistive Feet 14 Ohm-Meter- 16"	0	0	0
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1096	1197	1293	1324
Base Interval-Feet KB.	1180	1256	1318	1385
Gross H- Feet	84	59	25	61
Net h -Induction	0	4	6	7
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1201 Ft. K.B. 1166 Ft. SS.

Interval(s): 1225, 1216, 1214, 1212, 1211, 1198, 1187, 1182, 1177

Fracturing: Initial Frac Pressure 3000 psi Rate 21 B/M Final Frac Pressure 1500 psi Rate 36 B/M
Initial SI Pressure 700 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal - 100 Hour 4 Extended 4 at 101 Hours

Conditions at End of Extended Flow Hours 101 Rate 4 MCFD at 8 psig 25 / 2 / 74
Daily Pressure Decline 4 psi Deliverability at 100 psig (WHP) MCFD 3

Pressure Data: SIP Before Test, psig 437 Wellhead Pressure After 212 Hours Buildup 335 psig
Extrapolated Shut-in Pressure- Wellhead psig 437 Formation psia 464
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 1.1
KH from Production Data MD Ft. 1.15 Condition Ratio (KH Prod.) / KH Reservoir -

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-23-19-6 Location: 6-23-19-6 W4M Elevations: Gr. 2531 K.B. 2541

Stage: 2 Spud Date: 21-11-73 Total Depth: 2671 Formation: Bow Island

Production Casing (4½") Set at 2303 Ft. K.B. Production Packer Set at 2671 Ft. K.B.

Completed Zones: Medicine Hat & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 1.50

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1195	1418	223
Base- Feet K.B.	1418	1552	134
Thickness - Feet	223	134	357
Resistive Feet 10 Ohm-Meter- 16"	80	92	172
Resistive Feet 10 Ohm-Meter- Induction	3	61	64
Resistive Feet 14 Ohm-Meter- 16"	0	5	5
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1260	1344	1418	1456
Base Interval-Feet KB.	1330	1402	1454	1510
Gross H- Feet	70	58	36	54
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-29-19-6 Location: 6-29-19-6 W4M Elevations: Gr. 2732 K.B. 2742

Stage: 2 Spud Date: 5-12-73 Total Depth: 3563 Formation: Mississippian

Production Casing (4½") Set at 2450 Ft. K.B. Production Packer Set at 1668 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: DST #1: 3456 - 3410, DST #2: 3456-3410, DST #3: 3409 -3376, DST #4: 2755 - 2775

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. IE, Rm at 60°F - 2.98

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1402	1624	[illegible]
Base- Feet K.B.	1624	1744	120
Thickness - Feet	222	120	342
Resistive Feet 10 Ohm-Meter- 16"	203	114	317
Resistive Feet 10 Ohm-Meter- Induction	0	11	11
Resistive Feet 14 Ohm-Meter- 16"	0	12	12
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1469	1550	1624	1640
Base Interval-Feet KB.	1534	1610	1632	1708
Gross H- Feet	65	60	8	68
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1606 Ft. K.B. 1136 Ft. SS.

Interval(s): 1579, 1581, 1583, 1585, 1587, 1625, 1627, 1629, 1631, 1633

Fracturing: Initial Frac Pressure 3800 psi Rate 22 B/M Final Frac Pressure 1500 psi Rate 36 B/M
Initial SI Pressure 750 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 19.8 at 188 Hours

Conditions at End of Extended Flow Hours 188 Rate 19.4 MCFD at 41 psig 9 / 4 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 18

Pressure Data: SIP Before Test, psig 430 Wellhead Pressure After 95 Hours Buildup 403 psig

Extrapolated Shut-in Pressure- Wellhead psig 430 Formation psia 461

Shut-in Wellhead Pressure Readings-psig 442.5 at 17 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 9.17

KH from Production Data MD Ft. 5.78 Condition Ratio (KH Prod. / KH Reservoir) -

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-34-19-6 Location: 6-34-19-6 W4M Elevations: Gr. 2632 K.B. 2640

Stage: 2 Spud Date: 30-11-73 Total Depth: 1800 Formation: Medicine Hat

Production Casing (4½") Set at 1791 Ft. K.B. Production Packer Set at 1553 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. [illegible]

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1275	1497	222
Base- Feet K.B.	1497	1622	125
Thickness - Feet	222	125	347
Resistive Feet 10 Ohm-Meter- 16"	28	74	[illegible]
Resistive Feet 10 Ohm-Meter- Induction	0	40	40
Resistive Feet 14 Ohm-Meter- 16"	3	1	4
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1338	1424	1497	1520
Base Interval-Feet KB.	1412	1480	1516	1587
Gross H- Feet	74	56	19	6
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1523 Ft. K.B. 1117 Ft. SS.

Interval(s): 1545, 1530, 1525, 1522, 1516, 1514, 1507, 1506, 1502, 1500

Fracturing: Initial Frac Pressure 2800 psi Rate 36 B/M Final Frac Pressure 1700 psi Rate 32 B/M
Initial SI Pressure 800 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour 11.6 Extended 11.6 at 143 Hours

Conditions at End of Extended Flow Hours 143 Rate 11.5 MCFD at 20 psig 17 / 4 / 74
Daily Pressure Decline 2 psi Deliverability at 100 psig (WHP) MCFD 10.1

Pressure Data: SIP Before Test, psig 443 Wellhead Pressure After 73.5 Hours Buildup 283 psig

Extrapolated Shut-in Pressure- Wellhead psig 443 Formation psia 473

Shut-in Wellhead Pressure Readings-psig 447.0 at 18 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 15.17

KH from Production Data MD Ft. 3.14 Condition Ratio (KH Prod. / KH Reservoir) -

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-16-19-7 Location: 6-16-19-7 W4M Elevations: Gr. 2630 K.B. 2640

Stage: 2 Spud Date: 13-11-73 Total Depth: 1889 Formation: Medicine Hat

Production Casing (4½") Set at 1887 Ft. K.B. Production Packer Set at - Ft. K.B.

Completed Zones: Medicine Hat Potential Zones: _____

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1347 - 1367, Core #2: 1464 - 1484.

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: No Saraband analysis. IE, Rm at 60°F - 2.93

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1230	1458	228
Base- Feet K.B.	1458	1560	102
Thickness - Feet	228	102	330
Resistive Feet 10 Ohm-Meter- 16"	82	82	164
Resistive Feet 10 Ohm-Meter- Induction	4	28	32
Resistive Feet 14 Ohm-Meter- 16"	22	20	42
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1289	1380	1458	1482
Base Interval-Feet KB.	1366	1427	1477	1544
Gross H- Feet	77	47	19	62
Net h -Induction	0	0	2	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 10-22-19-7 Location: 10-22-19-7 W4M Elevations: Gr. 2590 K.B. 2600

Stage: 2 Spud Date: 8-2-74 Total Depth: 3010 Formation: Basal Colorado

Production Casing (4½") Set at 2360 Ft. K.B. Production Packer Set at 1698.73 Ft. K.B.

Completed Zones: Medicine Hat & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: DST #1: 3010-2900. Basal Colorado dead in 8 minutes. Recovered 60 feet mud.

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. IE, Rm at 60°F - 0.75

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1210	1435	
Base- Feet K.B.	1435	1546	111
Thickness - Feet	225	111	336
Resistive Feet 10 Ohm-Meter- 16"	185	98	
Resistive Feet 10 Ohm-Meter- Induction	0	20	20
Resistive Feet 14 Ohm-Meter- 16"	0	13	13
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

Resistivity Log Analysis 12 Ohm -Meter	A Zone A-1 Interval	A Zone A-2 Interval	B Zone B-1 Interval	B Zone B-2 Interval
Top Interval -Feet KB.	1270	1360	1435	1460
Base Interval-Feet KB.	1344	1403	1455	1523
Gross H- Feet	74	43	20	63
Net h -Induction	0	0	0	0

Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M

Initial SI Pressure _____ psi _____Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours_____ Rate _____MCFD at _____psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-32-19-7 Location: 6-32-19-7 W4M Elevations: Gr. 2565 K.B. 2575

Stage: 2 Spud Date: 19-11-73 Total Depth: 1755 Formation: Medicine Hat

Production Casing (4½") Set at 1750 Ft. K.B. Production Packer Set at 1554 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: IE, Rm at 60°F - 0.32

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1204	1436	232
Base- Feet K.B.	1436	1548	112
Thickness - Feet	232	112	344
Resistive Feet 10 Ohm-Meter- 16"	117	109	326
Resistive Feet 10 Ohm-Meter- Induction	46	52	98
Resistive Feet 14 Ohm-Meter- 16"	0	8	8
Saraband Analysis- Thickness-Feet	31	17	48
Porosity -%	15.15	15.29	15.20
Water Saturation-%	67.33	68.59	67.78

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1261	1359	1436	1464
Base Interval-Feet KB.	1342	1399	1460	1524
Gross H- Feet	81	40	24	60
Net h -Induction	0	0	8	1
Saraband Analysis				
Gross H - Feet	3	18	16	2
Net h - Feet	3	18	15	2
ø - %	11.20	14.81	15.25	15.60
SW - %	64.66	65.55	68.40	70.00

Perforations: Size: 3-1/8" Type: Bullet No./Foot: 1 Mid Point: 1414 Ft. K.B. 1161 Ft. SS.
Interval(s): 1437 - 1441, 1387 - 1391

Fracturing: Initial Frac Pressure 3800 psi Rate 19 B/M Final Frac Pressure 1750 psi Rate 43 B/M
Initial SI Pressure 800 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours_____ Rate _____MCFD at _____psig ____/ ____/____
Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig
Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____
KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-35-19-7 Location: 6-35-19-7 W4M Elevations: Gr. 2483 K.B. 2491

Stage: 2 Spud Date: 8-11-73 Total Depth: 1650 Formation: Medicine Hat

Production Casing (4½") Set at 1643 Ft. K.B. Production Packer Set at 1354 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: IE, Rm at 60°F - 0.25

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1082	1310	228
Base- Feet K.B.	1310	1426	116
Thickness - Feet	228	116	344
Resistive Feet 10 Ohm-Meter- 16"	187	119	306
Resistive Feet 10 Ohm-Meter- Induction	7	46	53
Resistive Feet 14 Ohm-Meter- 16"	0	14	14
Saraband Analysis- Thickness-Feet	17	1	18
Porosity -%	15.60	12.70	14.89
Water Saturation-%	62.24	76.00	63.01

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1146	1237	1310	1347
Base Interval-Feet KB.	1221	1280	1338	1400
Gross H- Feet	75	43	28	53
Net h -Induction	0	0	7	0
Saraband Analysis				
Gross H - Feet	7	17	1	0
Net h - Feet	0	17	1	0
ø - %		15.60	12.70	
SW - %		62.94	76.00	

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1294 Ft. K.B. 1197 Ft. SS.

Interval(s): 1320, 1318, 1316, 1314, 1322, 1268, 1275, 1270, 1266

Fracturing: Initial Frac Pressure 2500 psi Rate 31 B/M Final Frac Pressure 1700 psi Rate 48 B/M
Initial SI Pressure 750 psi 15 Min. SIP 650 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 71 at 197.5 Hours

Conditions at End of Extended Flow Hours 197.5 Rate 65.7 MCFD at 104 psig 10 / 4 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 66

Pressure Data: SIP Before Test, psig 425 Wellhead Pressure After 67 Hours Buildup 426 psig

Extrapolated Shut-in Pressure- Wellhead psig 426 Formation psia 453

Shut-in Wellhead Pressure Readings-psig 429.5 at 17 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 7.91 KH Fracture MD Ft. (Buildup Data) 9.38

KH from Production Data MD Ft. 20.95 Condition Ratio (KH Prod. / KH Reservoir) 2.65

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-12-19-8 Location: 6-12-19-8 W4M Elevations: Gr. 2516 K.B. 2526

Stage: 2 Spud Date: 15-11-73 Total Depth: 2941 Formation: Basal Colorado

Production Casing (4½") Set at 2197 Ft. K.B. Production Packer Set at 1604 Ft. K.B.

Completed Zones: Medicine Hat & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: DST #1: 2810 - 2941

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 0.25

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1113	1342	229
Base- Feet K.B.	1342	1451	109
Thickness - Feet	229	109	338
Resistive Feet 10 Ohm-Meter- 16"	75	73	148
Resistive Feet 10 Ohm-Meter- Induction	6	33	39
Resistive Feet 14 Ohm-Meter- 16"	16	21	37
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

Resistivity Log Analysis 12 Ohm -Meter	A Zone A-1 Interval	A Zone A-2 Interval	B Zone B-1 Interval	B Zone B-2 Interval
Top Interval -Feet KB.	1176	1260	1341	1370
Base Interval-Feet KB.	1250	1319	1367	1423
Gross H- Feet	74	59	26	53
Net h -Induction	0	0	4	0

Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-19-19-8 Location: 6-19-19-8 W4M Elevations: Gr. 2562 K.B. 2572

Stage: 2 Spud Date: 26-11-73 Total Depth: 2360 Formation: Second White Specks

Production Casing (4½") Set at 2346 Ft. K.B. Production Packer Set at 1388 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid. IE, Rm at 60°F - 0.77

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1152	1366	214
Base- Feet K.B.	1366	1480	114
Thickness - Feet	214	114	328
Resistive Feet 10 Ohm-Meter- 16"	193	104	297
Resistive Feet 10 Ohm-Meter- Induction	50	36	86
Resistive Feet 14 Ohm-Meter- 16"	0	0	0
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

Resistivity Log Analysis 12 Ohm -Meter	A Zone A-1 Interval	A Zone A-2 Interval	B Zone B-1 Interval	B Zone B-2 Interval
Top Interval -Feet KB.	1206	1292	1366	1383
Base Interval-Feet KB.	1287	1346	1380	1452
Gross H- Feet	81	54	14	69
Net h -Induction	0	0	0	0

Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1294 Ft. K.B. 1278 Ft. SS

Interval(s): 1334, 1330, 1298, 1277, 1263, 1257, 1254

Fracturing: Initial Frac Pressure 1900 psi Rate 42 B/M Final Frac Pressure 1650 psi Rate 45 B/M

Initial SI Pressure 1700 psi 10 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour 24 Extended 26 at 119.5 Hours

Conditions at End of Extended Flow Hours 119.5 Rate 23.7 MCFD at 113 psig 16 / 4 / 74

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 24

Pressure Data: SIP Before Test, psig 300 Wellhead Pressure After 24 Hours Buildup 280 psig

Extrapolated Shut-in Pressure- Wellhead psig 420 Formation psia 447

Shut-in Wellhead Pressure Readings-psig _____ at / /

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 1.77 KH Fracture MD Ft. (Buildup Data) 8.68

KH from Production Data MD Ft. 7.98 Condition Ratio (KH Prod. / KH Reservoir) 4.51

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-22-19-8 Location: 6-22-19-8 W4M Elevations: Gr. 2524 K.B. ____

Stage: 2 Spud Date: 23-11-73 Total Depth: 1678 Formation: Medicine Hat

Production Casing (4½") Set at 1663 Ft. K.B. Production Packer Set at 1368 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: ____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: ____

DST Intervals - Remarks: ____

Operating Remarks-Drilling: ____

-Logging: ISF, Rm at 60°F - 0.40

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1114	1329	215
Base- Feet K.B.	1329	1451	122
Thickness - Feet	215	122	337
Resistive Feet 10 Ohm-Meter- 16"	122	84	206
Resistive Feet 10 Ohm-Meter- Induction	26	38	64
Resistive Feet 14 Ohm-Meter- 16"	10	14	24
Saraband Analysis- Thickness-Feet	19	11	30
Porosity -%	12.06	10.90	11.63
Water Saturation-%	74.16	67.46	71.71

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1174	1260	1329	1360
Base Interval-Feet KB.	1252	1312	1354	1422
Gross H- Feet	78	52	25	62
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet	2	26	21	0
Net h - Feet	1	18	8	0
Ø - %	10.00	12.18	12.38	
SW - %	78.00	73.95	74.37	

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1319 Ft. K.B. 121[illegible] Ft.

Interval(s): 1348, 1342, 1338, 1336, 1302, 1301, 1300, 1298, 1296, 1290

Fracturing: Initial Frac Pressure 3900 psi Rate 17 B/M Final Frac Pressure 2500psi Rate 23 "

Initial SI Pressure 1500 psi 15 Min. SIP 1350 psi

AOF Potential MCFD: Isochronal - 100 Hour 148 Extended 148 at 262 Hours

Conditions at End of Extended Flow Hours 262 Rate 63 MCFD at 302 psig 9 / 4 / 74

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 138

Pressure Data: SIP Before Test, psig 352 Wellhead Pressure After 167 Hours Buildup 379 psig

Extrapolated Shut-in Pressure- Wellhead psig 403 Formation psia 428

Shut-in Wellhead Pressure Readings-psig ____ at __ / __ /

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 12.24 KH Fracture MD Ft. (Buildup Data) ____

KH from Production Data MD Ft. 48.51 Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-6-20-3 Location: 6-6-20-3 W4M Elevations: Gr. 2158 K.B. 2168

Stage: 1 Spud Date: 15-8-73 Total Depth: 1470 Formation: Medicine Hat

Production Casing (4½") Set at 1470 Ft. K.B. Production Packer Set at 1177 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: —

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: —

DST Intervals - Remarks: —

Operating Remarks-Drilling: —

-Logging: ISF, Rm at 60°F - 1.39

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	866	1109	243
Base- Feet K.B.	1109	1237	128
Thickness - Feet	243	128	371
Resistive Feet 10 Ohm-Meter- 16"	13	42	55
Resistive Feet 10 Ohm-Meter- Induction	15	52	67
Resistive Feet 14 Ohm-Meter- 16"	1	1	
Saraband Analysis- Thickness-Feet	25	27	52
Porosity -%	14.34	14.70	
Water Saturation-%	52.52	56.31	54.49

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	936	1012	1109	1140
Base Interval-Feet KB.	1001	1073	1133	1200
Gross H- Feet	65	61	24	60
Net h -Induction	0	0	10	0
Saraband Analysis				
Gross H - Feet	0	18	24	0
Net h - Feet	0	18	24	0
ø - %		14.63	14.27	
SW - %		52.55	56.12	

Perforations: Size: 1/2" Type: Bullet No./Foot: 1 Mid Point: 1084.5 Ft. K.B. 1083 Ft. SS.

Interval(s): 1127, 1119, 1117, 1111, 1089, 1065, 1057, 1043, 1042

Fracturing: Initial Frac Pressure 3500 psi Rate 30 B/M Final Frac Pressure 1600 psi Rate 47 B/M

Initial SI Pressure 400 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 46 at 45.5 Hours

Conditions at End of Extended Flow Hours 45.5 Rate 38 MCFD at 177 psig 18 / 12 / 73

Daily Pressure Decline 7.1 psi Deliverability at 100 psig (WHP) MCFD 43

Pressure Data: SIP Before Test, psig 445 Wellhead Pressure After 119.5 Hours Buildup 421 psig

Extrapolated Shut-in Pressure- Wellhead psig 445 Formation psia 470

Shut-in Wellhead Pressure Readings-psig ____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 2.77 KH Fracture MD Ft. (Buildup Data) 8.65

KH from Production Data MD Ft. 9.01 Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-7-20-4 Location: 6-7-20-4 W4M Elevations: Gr. 2387 K.B. 2397

Stage: 2 Spud Date: 4-11-73 Total Depth: 1670 Formation: Medicine Hat

Production Casing (4½") Set at 1667 Ft. K.B. Production Packer Set at 1334 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks:

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid for Milk River. IE, Rm at 60°F - 0.73

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1077	1332	255
Base- Feet K.B.	1332	1446	114
Thickness - Feet	255	114	369
Resistive Feet 10 Ohm-Meter- 16"	87	46	133
Resistive Feet 10 Ohm-Meter- Induction	24	28	-
Resistive Feet 14 Ohm-Meter- 16"	27	25	52
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1147	1218	1332	1350
Base Interval-Feet KB.	1203	1288	1345	1404
Gross H- Feet	56	70	13	54
Net h -Induction	0	0	0	1
Saraband Analysis				
Gross H - Feet	4	30	7	3
Net h - Feet	4	29	6	3
Ø - %	14.95	16.17	14.80	14.23
SW - %	67.50	62.72	67.16	63.00

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1280 Ft. K.B. 1117 Ft. SS.

Interval(s): 1322, 1318, 1316, 1314, 1262, 1256, 1252, 1248, 1238, 1237

Fracturing: Initial Frac Pressure 2600 psi Rate 35 B/M Final Frac Pressure 1700 psi Rate 43 B/M
Initial SI Pressure 700 psi 15 Min. SIP 575 psi

AOF Potential MCFD: Isochronal - 100 Hour 87 Extended 45 at 311 Hours

Conditions at End of Extended Flow Hours 311 Rate 37 MCFD at 180 psig 7 / 3 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 42

Pressure Data: SIP Before Test, psig 435 Wellhead Pressure After 4 Hours Buildup 352 psig

Extrapolated Shut-in Pressure- Wellhead psig 435 Formation psia 462

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 6.21 KH Fracture MD Ft. (Buildup Data) 8.09

KH from Production Data MD Ft. 13.19 Condition Ratio (KH Prod.) / KH Reservoir 2.12

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-10-20-4 Location: 6-10-20-4 W4M Elevations: Gr. 2403 K.B. 2413

Stage: 2 Spud Date: 9-11-73 Total Depth: 2340 Formation: Bow Island

Production Casing (4½") Set at 1887 Ft. K.B. Production Packer Set at 1488.15 Ft. K.B.

Completed Zones: Milk River & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: DST # 1: 2175 - 2204

Operating Remarks-Drilling: _____

-Logging: ISF, Rm at 60°F - 0.80

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	830	1086	256
Base- Feet K.B.	1086	1206	120
Thickness - Feet	256	120	376
Resistive Feet 10 Ohm-Meter- 16"	36	52	88
Resistive Feet 10 Ohm-Meter- Induction	16	26	42
Resistive Feet 14 Ohm-Meter- 16"	3	3	6
Saraband Analysis- Thickness-Feet	3	7	10
Porosity -%	15.43	16.14	. ''
Water Saturation-%	61.00	71.86	68.60

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	901	983	1086	1114
Base Interval-Feet KB.	971	1050	1105	1169
Gross H- Feet	70	67	19	55
Net h -Induction	0	0	4	0
Saraband Analysis				
Gross H - Feet	1	1	8	1
Net h - Feet	0	0	6	1
Ø - %			14.28	13.60
SW - %			71.83	72.00

Perforations: Size: 2-1/8" Type: Jet No./Foot: 1 Mid Point: 1091 Ft. K.B. 1322 Ft. SS.
Interval(s): 1144, 1143, 1097, 1093, 1091, 1046, 1042, 1040, 1038, 1037

Fracturing: Initial Frac Pressure 3900 psi Rate 23 B/M Final Frac Pressure 1200 psi Rate 44 B/M
Initial SI Pressure 2000 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 59 at 72 Hours

Conditions at End of Extended Flow Hours 72 Rate 58 MCFD at 55 psig 25 / 4 / 74
Daily Pressure Decline 3.0 psi Deliverability at 100 psig (WHP) MCFD 56

Pressure Data: SIP Before Test, psig 458 Wellhead Pressure After 24 Hours Buildup 331 psig
Extrapolated Shut-in Pressure- Wellhead psig 458 Formation psia 484
Shut-in Wellhead Pressure Readings-psig 440.0 at 19 / 6 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 73.72
KH from Production Data MD Ft. 15.89 Condition Ratio (KH Prod. / KH Reservoir) 0.56

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-10-20-5 Location: 6-10-20-5 W4M Elevations: Gr. 2395 K.B. 2403

Stage: 2 Spud Date: 18-11-73 Total Depth: 1690 Formation: Medicine Hat

Production Casing (4½") Set at 1668 Ft. K.B. Production Packer Set at 1333 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1120 - 1140, Core #2: 1210- 1230

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid for Milk River. ISF, Rm at 60°F - 0.25

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1086	1322	
Base- Feet K.B.	1322	1438	116
Thickness - Feet	236	116	352
Resistive Feet 10 Ohm-Meter- 16"	79	53	132
Resistive Feet 10 Ohm-Meter- Induction	8	6	14
Resistive Feet 14 Ohm-Meter- 16"	12	7	19
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1148	1236	1322	1346
Base Interval-Feet KB.	1222	1300	1341	1429
Gross H- Feet	74	64	19	83
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet	0	23	2	1
Net h - Feet	0	19	2	0
ø - %		15.24	14.20	
SW - %		70.10	69.00	

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1259 Ft. K.B. 1144 Ft. SS.
Interval(s): 1323, 1316, 1314, 1312, 1258, 1254, 1246, 1244, 1196, 1194

Fracturing: Initial Frac Pressure 3800 psi Rate 12 B/M Final Frac Pressure 1600 psi Rate 48 B/M
Initial SI Pressure 800 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 19.2 at 288 Hours

Conditions at End of Extended Flow Hours 288 Rate 18.4 MCFD at 84 psig 7 / 3 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 17.0

Pressure Data: SIP Before Test, psig 417 Wellhead Pressure After 534 Hours Buildup 420 psig
Extrapolated Shut-in Pressure- Wellhead psig 437 Formation psia 464
Shut-in Wellhead Pressure Readings-psig 442.0 at 19 / 6 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 2.25 KH Fracture MD Ft. (Buildup Data) 20.83
KH from Production Data MD Ft. 5.38 Condition Ratio (KH Prod.) / KH Reservoir 2.39

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-8-20-6 Location: 6-8-20-6 W4M Elevations: Gr. 2630 K.B. 2640

Stage: 2 Spud Date: 27-11-73 Total Depth: 3135 Formation: Basal Colorado

Production Casing (4½") Set at 2296 Ft. K.B. Production Packer Set at 1578 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1354 - 1374, Core #2: 1449 - 1469

DST Intervals - Remarks: DST #1: 2990 - 3135, DST #2: 2637 - 2652

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid for Milk River. ISF, Rm at 60°F - 2.35

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1288	1515	227
Base- Feet K.B.	1515	1632	117
Thickness - Feet	227	117	344
Resistive Feet 10 Ohm-Meter- 16"	28	60	88
Resistive Feet 10 Ohm-Meter- Induction	4	29	33
Resistive Feet 14 Ohm-Meter- 16"	4	3	7
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1350	1430	1515	1557
Base Interval-Feet KB.	1409	1480	1544	1600
Gross H- Feet	59	50	29	43
Net h -Induction	0	2	0	0
Saraband Analysis				
Gross H - Feet	4	27	16	0
Net h - Feet	4	25	14	0
Ø - %	14.77	15.40	15.20	
SW - %	64.25	67.92	69.78	

Perforations: Size: 3-1/8" Type: Jet No./Foot: 1 Mid Point: 1489 Ft. K.B. 910 Ft. SS.
Interval(s): 1536, 1534, 1505, 1480, 1467, 1465, 1463, 1461, 1445, 1441

Fracturing: Initial Frac Pressure 2700 psi Rate 30 B/M Final Frac Pressure 1600 psi Rate 46 B/M
Initial SI Pressure 700 psi 15 Min. SIP 625 psi

AOF Potential MCFD: Isochronal - 100 Hour 19.5 Extended 18.2 at 119 Hours

Conditions at End of Extended Flow Hours 119 Rate 17.9 MCFD at 38 psig 16 / 4 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 17

Pressure Data: SIP Before Test, psig 416 Wellhead Pressure After 24 Hours Buildup 272 psig
Extrapolated Shut-in Pressure- Wellhead psig 435 Formation psia 465
Shut-in Wellhead Pressure Readings-psig 442.5 at 17 / 6 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data)
KH from Production Data MD Ft. 5.19 Condition Ratio (KH Prod.) / KH Reservoir

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WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-12-20-6 Location: 6-12-20-6 W4M Elevations: Gr. 2637 K.B. 2645

Stage: 2 Spud Date: 24-11-73 Total Depth: 1850 Formation: Medicine Hat

Production Casing (4½") Set at 1854 Ft. K.B. Production Packer Set at 1562 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: Saraband analysis invalid. ISF, Rm at 60°F - 3.10

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1305	1528	223
Base- Feet K.B.	1528	1658	130
Thickness - Feet	223	130	353
Resistive Feet 10 Ohm-Meter- 16"	14	75	89
Resistive Feet 10 Ohm-Meter- Induction	0	36	36
Resistive Feet 14 Ohm-Meter- 16"	3	1	4
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1369	1454	1528	1556
Base Interval-Feet KB.	1440	1505	1549	1600
Gross H- Feet	71	51	21	44
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet	13	26	19	13
Net h - Feet	13	26	19	13
Ø - %	14.29	17.41	16.07	14.47
SW - %	62.46	62.07	67.00	60.07

Perforations: Size: 3-3/8" Type: Jet No./Foot: 1 Mid Point: 1533 Ft. K.B. 1112 Ft. SS.
Interval(s): 1554, 1541, 1539, 1538, 1536, 1518, 1516, 1514, 1512

Fracturing: Initial Frac Pressure 2400 psi Rate 38 B/M Final Frac Pressure 1400 psi Rate 48 B/M
Initial SI Pressure 700 psi 15 Min. SIP 625 psi

AOF Potential MCFD: Isochronal - 100 Hour 16 Extended 16 at 117 Hours

Conditions at End of Extended Flow Hours 117 Rate 16 MCFD at 5 psig 6 / 22 / 73
Daily Pressure Decline 1 psi Deliverability at 100 psig (WHP) MCFD 14

Pressure Data: SIP Before Test, psig 419 Wellhead Pressure After 68.5 Hours Buildup 347 psig
Extrapolated Shut-in Pressure- Wellhead psig 419 Formation psia 447
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) .41 KH Fracture MD Ft. (Buildup Data) 17.77
KH from Production Data MD Ft. 1.1 Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-10-20-7 Location: 6-10-20-7 W4M Elevations: Gr. 2443 K.B. 2453

Stage: 2 Spud Date: 29-10-73 Total Depth: 1588 Formation: Medicine Hat

Production Casing (4½") Set at 1583 Ft. K.B. Production Packer Set at 1339 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: [illegible]

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1178	1306	127
Base- Feet K.B.	1305	1418	112
Thickness - Feet	127	112	239
Resistive Feet 10 Ohm-Meter- 16"	211	112	323
Resistive Feet 10 Ohm-Meter- Induction	120	82	202
Resistive Feet 14 Ohm-Meter- 16"	5	26	31
Saraband Analysis- Thickness-Feet	18	6	24
Porosity -%	15.79	14.70	15.51
Water Saturation-%	67.7	68.80	67.97

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1138	1230	1306	1338
Base Interval-Feet KB.	1213	1272	1330	1391
Gross H- Feet	75	42	24	53
Net h -Induction	2	0	17	5
Saraband Analysis				
Gross H - Feet	26	33	23	10
Net h - Feet	0	17	6	0
ø - %		15.73	14.70	
SW - %		67.94	68.83	

Perforations: Size: 3-1/4" Type: Bullet No./Foot: 1 Mid Point: 1282.5 Ft. K.B. 1260.5 Ft. SS.

Interval(s): 1314, 1313, 1311, 1288, 1267, 1266, 1265, 1264, 1253, 1251

Fracturing: Initial Frac Pressure 2350 psi Rate 37 B/M Final Frac Pressure 2000 psi Rate 39 B/M
Initial SI Pressure 850 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour 11.5 Extended 10.2 at 162 Hours

Conditions at End of Extended Flow Hours 162 Rate 10.0 MCFD at 41 psig 21 / 4 / 74
Daily Pressure Decline 4.5 psi Deliverability at 100 psig (WHP) MCFD 9.5

Pressure Data: SIP Before Test, psig 446 Wellhead Pressure After 95 Hours Buildup 228 psig

Extrapolated Shut-in Pressure- Wellhead psig 446 Formation psia 474

Shut-in Wellhead Pressure Readings-psig 439.0 at 17 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 0.21 KH Fracture MD Ft. (Buildup Data) 23.83

KH from Production Data MD Ft. 2.77 Condition Ratio (KH Prod. / KH Reservoir) 13.2

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-8-20-8 Location: 6-8-20-8 W4M Elevations: Gr. 2475 K.B. 2485

Stage: 2 Spud Date: 17-12-73 Total Depth: 3256 Formation: Mississippian

Production Casing (4½") Set at 2142 Ft. K.B. Production Packer Set at 1547 Ft. K.B.

Completed Zones: Medicine Hat & Second White Specks Potential Zones: _____

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: _____

-Logging: IE, Rm at 60°F - 1.32

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1090	1304	214
Base- Feet K.B.	1304	1416	112
Thickness - Feet	214	112	326
Resistive Feet 10 Ohm-Meter- 16"	179	100	279
Resistive Feet 10 Ohm-Meter- Induction	10	29	39
Resistive Feet 14 Ohm-Meter- 16"	0	0	0
Saraband Analysis- Thickness-Feet	75	28	103
Porosity -%	16.37	16.59	16.43
Water Saturation-%	56.91	60.11	57.78

	A Zone		B Zone	
Resistivity Log Analysis 12 Ohm -Meter	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Top Interval -Feet KB.	1148	1234	1304	1337
Base Interval-Feet KB.	1225	1280	1329	1400
Gross H- Feet	77	46	25	63
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet	21	28	19	10
Net h - Feet	21	28	18	10
Ø - %	15.23	18.44	18.27	13.54
SW - %	57.57	57.65	62.34	58.70

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 6-12-20-8 Location: 6-12-20-8 W4M Elevations: Gr. 2462 K.B. 2472

Stage: 2 Spud Date: 1-11-73 Total Depth: 1665 Formation: Medicine Hat

Production Casing (4½") Set at 1658 Ft. K.B. Production Packer Set at 1361 Ft. K.B.

Completed Zones: Milk River & Medicine Hat Potential Zones:

ERCB Status: Dual Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: Core # 1: 1170 - 1190, Core #2: 1260 - 1280

DST Intervals - Remarks:

Operating Remarks-Drilling:

-Logging: Saraband analysis invalid. IE, Rm at 60°F - 1.11

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1080	1300	220
Base- Feet K.B.	1300	1416	116
Thickness - Feet	220	116	
Resistive Feet 10 Ohm-Meter- 16"	198	126	324
Resistive Feet 10 Ohm-Meter- Induction	66	68	134
Resistive Feet 14 Ohm-Meter- 16"	9	18	27
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1139	1220	1300	1319
Base Interval-Feet KB.	1212	1271	1312	1389
Gross H- Feet	73	51	12	70
Net h -Induction	0	0	0	1
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
Ø - %				
SW - %				

Perforations: Size: 3-1/8" Type: Bullet No./Foot: 1 Mid Point: 1307 Ft. K.B. 1165 Ft. SS.
Interval(s): 1265, 1292, 1311, 1327, 1349, 1291, 1302, 1313, 1340

Fracturing: Initial Frac Pressure 3900 psi Rate 14 B/M Final Frac Pressure 3500 psi Rate 14 B/M
Initial SI Pressure 900 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour 12.5 Extended 12.5 at 169.5 Hours

Conditions at End of Extended Flow Hours 169.5 Rate 12.4 MCFD at 21 psig 22 / 4 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 11.6

Pressure Data: SIP Before Test, psig 437 Wellhead Pressure After 67 Hours Buildup 403 psig
Extrapolated Shut-in Pressure- Wellhead psig 437 Formation psia 463
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 2.16 KH Fracture MD Ft. (Buildup Data) 6.65
KH from Production Data MD Ft. 3.50 Condition Ratio (KH Prod. / KH Reservoir) 1.62

WELL INFORMATION SUMMARY
MILK RIVER FORMATION

A) GENERAL

Well Name: Alberta Suffield 11-16-20-8 Location: 11-16-20-8 W4M Elevations: Gr. 2456 K.B. 2466

Stage: 2 Spud Date: 9-1-74 Total Depth: 3264 Formation: Mississippian

Production Casing (4½") Set at 3243 Ft. K.B. Production Packer Set at _____ Ft. K.B.

Completed Zones: Glauconite Potential Zones: _____

ERCB Status: Single Zone Capped Gas Well at 23 / 8 / 74

Cored Intervals- Remarks: _____

DST Intervals - Remarks: _____

Operating Remarks-Drilling: BP at 1000 feet KB. Cement squeeze 905 feet KB to surface.

-Logging: No Saraband analysis. IE, Rm at 60°F - 1.07

B) FORMATION EVALUATION

	A Zone	B Zone	Total
Top-Feet K.B.	1057	1269	212
Base- Feet K.B.	1269	1384	115
Thickness - Feet	212	115	327
Resistive Feet 10 Ohm-Meter- 16"	186	103	289
Resistive Feet 10 Ohm-Meter- Induction	14	30	44
Resistive Feet 14 Ohm-Meter- 16"	4	0	4
Saraband Analysis- Thickness-Feet			
Porosity -%			
Water Saturation-%			

	A Zone		B Zone	
	A-1 Interval	A-2 Interval	B-1 Interval	B-2 Interval
Resistivity Log Analysis 12 Ohm -Meter				
Top Interval -Feet KB.	1113	1200	1269	1360
Base Interval-Feet KB.	1189	1242	1290	1384
Gross H- Feet	76	42	21	24
Net h -Induction	0	0	0	0
Saraband Analysis				
Gross H - Feet				
Net h - Feet				
ø - %				
SW - %				

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft. K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-1-15-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,182	1,278	
Resistive Feet 12 Ohm Meter-Long Normal	6	13	19
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,251 Ft.K.B. 1,084 Ft. SS.
Interval(s): 1210 - 1212, 1282 - 1286, 1290 - 1292

Fracturing: Initial Frac Pressure 4000 psi Rate 25 B/M Final Frac Pressure 1600 psi Rate 41 B/M
Initial SI Pressure 625 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal 420 100 Hour 160 Extended 151 at 159 Hours

Conditions at End of Extended Flow Hours 159 Rate 117 MCFD at 302 psig 5 / 11 / 73
Daily Pressure Decline 3.2 psi Deliverability at 100 psig(WHP) MCFD 142

Pressure Data: SIP Before Test, psig 605 Wellhead Pressure After 141 Hours Buildup 577 psig
Extrapolated Shut-in Pressure- Wellhead psig 605 Formation psia 638
Shut-in Wellhead Pressure Readings-psig 605 at 18 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 10.46 KH Fracture MD Ft.(Buildup Data) 25.40
KH from Production Data MD Ft. 31.98 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 3.06

Remarks: Completed in Atlee Buffalo/Medicine Hat and Medicine Hat B

Well Name: Alberta Suffield 6-4-15-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,313	1,415	
Resistive Feet 12 Ohm Meter-Long Normal	3	6	9
Saraband Analysis - Thickness -Feet	3	7	10
Porosity-%	11.60	11.13	11.28
Water Saturation -%	57.0	57.0	57.0
HCPV - Feet	0.149	0.335	0.4840

Perforations: Size: 2-1/8"Type: Jet No./Foot: 2 Mid Point: 1,367 Ft.KB. 1,071 Ft. SS.
Interval(s): 1314 - 1318, 1342 - 1344, 1416 - 1420

Fracturing: Initial Frac Pressure 3600psi Rate 26 B/M Final Frac Pressure 1800 psi Rate 40 B/M
Initial SI Pressure 700 psi 15 Min. SIP 680 psi

AOF Potential MCFD: Isochronal 500 100 Hour 100 Extended 93 at 259.5 Hours

Conditions at End of Extended Flow Hours 259.5 Rate 81 MCFD at 202 psig 11 / 11 / 73
Daily Pressure Decline nil psi Deliverability at 100 psig (WHP) MCFD 87

Pressure Data: SIP Before Test, psig 595 Wellhead Pressure After 217 Hours Buildup 554 psig
Extrapolated Shut-in Pressure-Wellhead psig 595 Formation psia 629
Shut-in Wellhead Pressure Readings-psig 597 at 18 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 4.97 KH Fracture MD Ft. (Buildup Data) 19.74
KH from Production Data MD Ft. 13.92 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.80

Remarks: Completed in Atlee Buffalo/Medicine Hat and Medicine Hat B.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 7-14-15-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,174	1,274	
Resistive Feet 12 Ohm Meter-Long Normal	12	9	21
Saraband Analysis- Thickness-Feet	12	9	21
Porosity- %	14.25	13.2	13.80
Water Saturation-%	56.0	56.7	56.30
HCPV -Feet	0.752	0.513	1.265

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,232 Ft.K.B. 1,119 Ft. SS.
Interval(s): 1180 - 1184, 1208 - 1210, 1280 - 1284

Fracturing: Initial Frac Pressure 2400psi Rate 32 B/M Final Frac Pressure 1750 psi Rate 32 B/M
Initial SI Pressure 600 psi 10 Min. SIP - psi

AOF Potential MCFD: Isochronal 1320 100 Hour 268 Extended 237 at 209 Hours

Conditions at End of Extended Flow Hours 209 Rate 218 MCFD at 172 psig 17 / 11 / 73

Daily Pressure Decline 0.2 psi Deliverability at 100 psig(WHP) MCFD 230

Pressure Data: SIP Before Test, psig 602 Wellhead Pressure After 145 Hours Buildup 541 psig

Extrapolated Shut-in Pressure- Wellhead psig 602 Formation psia 634

Shut-in Wellhead Pressure Readings-psig 602 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 11.43 KH Fracture MD Ft.(Buildup Data) 51.74

KH from Production Data MD Ft. 35.48 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 3.10

Remarks: Completed in Atlee Buffalo/Medicine Hat and Medicine Hat B Pools.

Well Name: Alberta Suffield 6-17-15-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,282	1,388	
Resistive Feet 12 Ohm Meter-Long Normal	3	8	11
Saraband Analysis - Thickness -Feet	2	0	2
Porosity-%	11.95		11.95
Water Saturation -%	54.6		54.6
HCPV - Feet	0.105		0.105

Perforations: Size: 3-½" Type: Jet No./Foot: 1-2 Mid Point: 1,291 Ft.KB. 1,120 Ft. SS.
Interval(s): 1285 - 1288 (1), 1294- 1296 (1), 1312 - 1317 (2), Reperf. 1312 - 1317, 1320 - 1324, 1286 - 1290, 1292 - 1296 (2)

Fracturing: Initial Frac Pressure 2600 psi Rate 37 B/M Final Frac Pressure 1500 psi Rate 49 B/M
Initial SI Pressure 650 psi 15 Min. SIP - psi

AOF Potential MCFD: Isochronal 260 100 Hour 104 Extended 104 at 96 Hours

Conditions at End of Extended Flow Hours 96 Rate 70 MCFD at 337 psig 14 / 9 / 73

Daily Pressure Decline 0.3 psi Deliverability at 100 psig (WHP) MCFD 80

Pressure Data: SIP Before Test, psig 581 Wellhead Pressure After 398 Hours Buildup 572 psig

Extrapolated Shut-in Pressure-Wellhead psig 580 Formation psia 612

Shut-in Wellhead Pressure Readings-psig 587 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 5.85 KH Fracture MD Ft. (Buildup Data) 8.76

KH from Production Data MD Ft. 16.96 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.89

Remarks: Completed in Atlee Buffalo/Medicine Hat Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-1-15-7

	A Zone	B Zone	Total
Top - Feet K.B.	1,250	1,360	
Resistive Feet 12 Ohm Meter-Long Normal	2	4	6
Saraband Analysis- Thickness-Feet	2	2	4
Porosity- %	12.15	12.25	12.20
Water Saturation-%	51.00	51.50	51.25
HCPV -Feet	0.119	0.118	0.237

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,333 Ft.K.B. 1,055 Ft. SS.
Interval(s): 1280 - 1286, 1360 - 1364

Fracturing: Initial Frac Pressure 2000 psi Rate 47 B/M Final Frac Pressure 1500 psi Rate 50 B/M
Initial SI Pressure 700 psi 15 Min. SIP - psi

AOF Potential MCFD: Isochronal 570 100 Hour 140 Extended 131 at 184.5 Hours

Conditions at End of Extended Flow Hours 184.5 Rate 125 MCFD at 132 psig 9 / 11 / 73

Daily Pressure Decline 5.7 psi Deliverability at 100 psig(WHP) MCFD 124

Pressure Data: SIP Before Test, psig 584 Wellhead Pressure After 190.5 Hours Buildup 529 psig

Extrapolated Shut-in Pressure- Wellhead psig 584 Formation psia 617

Shut-in Wellhead Pressure Readings-psig 597 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 5.69 KH Fracture MD Ft.(Buildup Data) 36.37

KH from Production Data MD Ft. 20.76 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 3.64

Remarks: Completed in Alderson and Medicine Hat B Pools.

Well Name: Alberta Suffield 6-3-15-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,253	1,358	
Resistive Feet 12 Ohm Meter-Long Normal	12	3	15
Saraband Analysis - Thickness -Feet	2	-	2
Porosity-%	14.55	-	14.55
Water Saturation -%	54.50	-	54.50
HCPV - Feet	0.132	-	0.132

Perforations: Size: ____ Type: ____ No./Foot: ____ Mid Point: ____ Ft.KB. ____ Ft. SS.
Interval(s): ____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure ____psi Rate ____B/M
Initial SI Pressure ____ psi ____ Min. SIP ____ psi

AOF Potential MCFD: Isochronal ____ 100 Hour ____ Extended ____ at ____ Hours

Conditions at End of Extended Flow Hours ____ Rate ____MCFD at ____ psig ____/____/____

Daily Pressure Decline ____ psi Deliverability at 100 psig (WHP) MCFD ____

Pressure Data: SIP Before Test, psig ____ Wellhead Pressure After ____ Hours Buildup ____ psig

Extrapolated Shut-in Pressure-Wellhead psig ____ Formation psia ____

Shut-in Wellhead Pressure Readings-psig ____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) ____ KH Fracture MD Ft. (Buildup Data) ____

KH from Production Data MD Ft. ____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ ____

Remarks: Poor Caliper. For Medicine Hat (B Zone) -Saraband invalid. Well completed in Milk River-Second White Specks.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-5-15-7

	A Zone	B Zone	Total
Top - Feet K.B.	1,252	1,368	
Resistive Feet 12 Ohm Meter-Long Normal	3	0	3
Saraband Analysis- Thickness-Feet	1	3	4
Porosity- %	11.70	11.23	11.34
Water Saturation-%	61.00	57.67	58.
HCPV -Feet	0.0457	0.1426	0.1883

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.K.B. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at _____ / _____ / _____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ _____

Remarks: Well not completed in Medicine Hat Formation. Single Zone Milk River Completion.

Well Name: Alberta Suffield 6-15-15-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,190	1,289	
Resistive Feet 12 Ohm Meter-Long Normal	0	0	
Saraband Analysis - Thickness -Feet	1	0	1
Porosity-%	.114		.114
Water Saturation -%	.400		.400
HCPV - Feet	0.045		0.045

Perforations: Size: 3-½" Type: Jet No./Foot: 1 Mid Point: 1214.5 Ft.KB. 1130.5 Ft. SS.
Interval(s): 1195, 1220 - 1234

Fracturing: Initial Frac Pressure 3600 psi Rate 32 B/M Final Frac Pressure 1700 psi Rate 40 B/M
Initial SI Pressure 800 psi 10 Min. SIP 750 psi

AOF Potential MCFD: Isochronal 455 100 Hour - Extended 97 at 96 Hours

Conditions at End of Extended Flow Hours 96 Rate 85 MCFD at 217 psig 13 / 9 / 73

Daily Pressure Decline 7.5 psi Deliverability at 100 psig (WHP) MCFD 94

Pressure Data: SIP Before Test, psig 569 Wellhead Pressure After 86 Hours Buildup 529 psig

Extrapolated Shut-in Pressure-Wellhead psig 591 Formation psia 622

Shut-in Wellhead Pressure Readings-psig 591 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 4.00 KH Fracture MD Ft. (Buildup Data) 10.23

KH from Production Data MD Ft. 15.28 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 3.82

Remarks: Completed in Alderson Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-17-15-7

	A Zone	B Zone	Total
Top - Feet K.B.	1,216		
Resistive Feet 12 Ohm Meter-Long Normal	0		0
Saraband Analysis- Thickness-Feet	1	0	1
Porosity- %	11.40		11.40
Water Saturation-%	67.00		67.00
HCPV -Feet	0.037		0.037

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: _____Ft.K.B. _____Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: The well is completed as a dual zone Milk River-Second White Specks well.

Well Name: Alberta Suffield 6-27-15-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,188		
Resistive Feet 12 Ohm Meter-Long Normal	0		
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig _____/_____/_____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia ___

Shut-in Wellhead Pressure Readings-psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Saraband analysis invalid - poor caliper. Well completed as a Milk River-Second White Specks dual.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-3-15-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,164		
Resistive Feet 12 Ohm Meter-Long Normal	6		6
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,354 Ft.K.B. 1,003 Ft. SS.

Interval(s): 1434 - 1438, 1444 - 1446, 1507 - 1510, 1198 - 1206

Fracturing: Initial Frac Pressure 3700psi Rate 22 B/M Final Frac Pressure 1700 psi Rate 45 B/M
Initial SI Pressure 600 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal ___ 100 Hour ___ Extended ___ at ___ Hours

Conditions at End of Extended Flow Hours ___ Rate ___ MCFD at ___ psig ___/___/___

Daily Pressure Decline ___ psi Deliverability at 100 psig (WHP) MCFD ___

Pressure Data: SIP Before Test, psig ___ Wellhead Pressure After ___ Hours Buildup ___ psig

Extrapolated Shut-in Pressure- Wellhead psig ___ Formation psia ___

Shut-in Wellhead Pressure Readings-psig ___ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) ___ KH Fracture MD Ft. (Buildup Data) ___

KH from Production Data MD Ft. ___ Condition Ratio (KH Prod.) / (KH Reservoir) ___

Remarks: Medicine Hat zone died during testing operations. Saraband analysis invalid -poor caliper.

Well Name: Alberta Suffield 6-13-15-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,196	-	
Resistive Feet 12 Ohm Meter-Long Normal	7	0	7
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,221 Ft.KB. 1,118 Ft. SS.

Interval(s): 1200 - 1204, 1208 - 1212, 1224 - 1234, 1238 - 1242

Fracturing: Initial Frac Pressure 2250psi Rate 42 B/M Final Frac Pressure 1400 psi Rate 42 B/M
Initial SI Pressure 750 psi 15 Min. SIP ___ psi

AOF Potential MCFD: Isochronal 143 100 Hour 37 Extended 37 at 96 Hours

Conditions at End of Extended Flow Hours 96 Rate 35 MCFD at 168 psig 12 / 9 / 73

Daily Pressure Decline 24 psi Deliverability at 100 psig (WHP) MCFD 36

Pressure Data: SIP Before Test, psig 575 Wellhead Pressure After 349 Hours Buildup 559 psig

Extrapolated Shut-in Pressure-Wellhead psig 575 Formation psia 605

Shut-in Wellhead Pressure Readings-psig 598 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 1.85 KH Fracture MD Ft. (Buildup Data) -

KH from Production Data MD Ft. 0.63 Condition Ratio (KH Prod.) / (KH Reservoir) 0.34

Remarks: Completed in Alderson Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 7-15-15-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,213	-	
Resistive Feet 12 Ohm Meter-Long Normal	6	-	6
Saraband Analysis- Thickness-Feet	13	0	13
Porosity- %	15.15		15.15
Water Saturation-%	60.77		60.77
HCPV -Feet	0.773		0.773

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: _____ Ft.K.B. _____ Ft. SS.
Interval(s):

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig / /

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod. / KH Reservoir)

Remarks: Well completed as a Milk River-Second White Specks dual.

Well Name: Alberta Suffield 6-17-15-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,195		
Resistive Feet 12 Ohm Meter-Long Normal	6		6
Saraband Analysis - Thickness -Feet	1	0	1
Porosity-%	11.50		11.50
Water Saturation -%	53.0		53.0
HCPV - Feet	0.054		0.054

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1216.5 Ft.KB. 1136.5 Ft. SS.
Interval(s): 1201 - 1207, 1216 - 1232

Fracturing: Initial Frac Pressure 1700 psi Rate 44 B/M Final Frac Pressure 1500 psi Rate 44 B/M
Initial SI Pressure 680 psi 15 Min. SIP 680 psi

AOF Potential MCFD: Isochronal 175 100 Hour 40 Extended 40 at 96 Hours

Conditions at End of Extended Flow Hours 96 Rate 39 MCFD at 93 psig 11 / 9 / 73

Daily Pressure Decline nil psi Deliverability at 100 psig (WHP) MCFD 38

Pressure Data: SIP Before Test, psig 528 Wellhead Pressure After 111 Hours Buildup 521 psig

Extrapolated Shut-in Pressure-Wellhead psig 528 Formation psia 557

Shut-in Wellhead Pressure Readings-psig 568 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 2.47 KH Fracture MD Ft. (Buildup Data) 11.11

KH from Production Data MD Ft. 7.86 Condition Ratio (KH Prod. / KH Reservoir) 3.18

Remarks: Completed in Alderson Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-30-15-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,310	1,430	
Resistive Feet 12 Ohm Meter-Long Normal	10	4	14
Saraband Analysis- Thickness-Feet	5	4	9
Porosity- %	13.22	13.60	13.39
Water Saturation-%	65.80	72.25	68.67
HCPV -Feet	0.226	0.151	0.377

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: ____Ft.K.B. _____Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi ____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Well completed as a Second White Specks, Milk River dual.

Well Name: Alberta Suffield 6-12-15-9

	A Zone	B Zone	Total
Top- Feet K.B.	1,286	1,376	
Resistive Feet 12 Ohm Meter-Long Normal	8	0	8
Saraband Analysis - Thickness -Feet	0	1	1
Porosity-%		16.10	16.10
Water Saturation -%		65.00	65.00
HCPV - Feet		0.056	0.056

Perforations: Size: ____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ___psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal 100 Hour _____ Extended at Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Well completed as a dual Milk River-Second White Specks producer.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-26-15-9

	A Zone	B Zone	Total
Top - Feet K.B.	1,356	1,480	
Resistive Feet 12 Ohm Meter-Long Normal	7	-	7
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1375 Ft.K.B. 1144 Ft. SS.
Interval(s): 1366 - 1371, 1388 - 1400

Fracturing: Initial Frac Pressure 3200 psi Rate 26 B/M Final Frac Pressure 1700 psi Rate 35 B/M
Initial SI Pressure 700 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal 400 100 Hour 67 Extended 67 at 97 Hours

Conditions at End of Extended Flow Hours 97 Rate 61 MCFD at 154 psig / /

Daily Pressure Decline 9 psi Deliverability at 100 psig (WHP) MCFD 60

Pressure Data: SIP Before Test, psig 526 Wellhead Pressure After 324 Hours Buildup 512 psig

Extrapolated Shut-in Pressure- Wellhead psig 526 Formation psia 557

Shut-in Wellhead Pressure Readings-psig 481 at 17 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 3.66 KH Fracture MD Ft. (Buildup Data) 11.02

KH from Production Data MD Ft. 13.08 Condition Ratio (KH Prod.) / (KH Reservoir) 3.58

Remarks: Saraband analysis - invalid. Alderson Pool completion.

Well Name: Alberta Suffield 6-32-16-5

	A Zone	B Zone	Total
Top- Feet K.B.	1,332	1,434	
Resistive Feet 12 Ohm Meter-Long Normal	8	3	11
Saraband Analysis - Thickness -Feet	10	2	12
Porosity-%	14.09	13.90	14.05
Water Saturation -%	49.80	48.50	49.58
HCPV - Feet	0.707	0.143	0.850

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,344 Ft.KB. 1,022 Ft. SS.
Interval(s): 1339 - 1349

Fracturing: Initial Frac Pressure 3900 psi Rate 15 B/M Final Frac Pressure 1500 psi Rate 41 B/M
Initial SI Pressure 600 psi - Min. SIP - psi

AOF Potential MCFD: Isochronal 1720 100 Hour 285 Extended 210 at 304 Hours

Conditions at End of Extended Flow Hours 304 Rate 185 MCFD at 201 psig 11 / 2 / 74

Daily Pressure Decline nil psi Deliverability at 100 psig (WHP) MCFD 203

Pressure Data: SIP Before Test, psig 595 Wellhead Pressure After 96 Hours Buildup 547 psig

Extrapolated Shut-in Pressure-Wellhead psig 595 Formation psia 628

Shut-in Wellhead Pressure Readings-psig 590 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 18.75 KH Fracture MD Ft. (Buildup Data) -

KH from Production Data MD Ft. 31.89 Condition Ratio (KH Prod.) / (KH Reservoir) 1.70

Remarks: Completed in Alderson Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-1-16-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,230	1,330	
Resistive Feet 12 Ohm Meter-Long Normal	8	8	16
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,285 Ft.K.B. 1,067 Ft. SS.
Interval(s): 1230 - 1236, 1262 - 1264, 1334 - 1338

Fracturing: Initial Frac Pressure 1800 psi Rate 42 B/M Final Frac Pressure 1500 psi Rate 42 B/M
Initial SI Pressure 600 psi 15 Min. SIP psi

AOF Potential MCFD: Isochronal 830 100 Hour 277 Extended 277 at 234.5 Hours

Conditions at End of Extended Flow Hours 234.5 Rate 144 MCFD at 372 psig 25 / 10 / 73

Daily Pressure Decline nil psi Deliverability at 100 psig(WHP) MCFD 265

Pressure Data: SIP Before Test, psig 539 Wellhead Pressure After 92.5 Hours Buildup 526 psig

Extrapolated Shut-in Pressure- Wellhead psig 544 Formation psia 575

Shut-in Wellhead Pressure Readings-psig 495 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 34.55 KH Fracture MD Ft.(Buildup Data) 36.47

KH from Production Data MD Ft. 50.38 Condition Ratio (KH Prod.) / KH Reservoir 1.4

Remarks: Completed Atlee Buffalo/Medicine Hat and Medicine Hat B. Saraband analysis invalid.

Well Name: Alberta Suffield 6-7-16-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,256	1,362	
Resistive Feet 12 Ohm Meter-Long Normal	6	2	8
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 3 Mid Point: 1,272 Ft.KB. 1,083 Ft. SS.
Interval(s): 1256 - 1261, 1283 - 1288

Fracturing: Initial Frac Pressure 1300 psi Rate 42 B/M Final Frac Pressure 1200 psi Rate 46 B/M
Initial SI Pressure 600 psi 15 Min. SIP 580 psi

AOF Potential MCFD: Isochronal 1250 100 Hour 340 Extended 295 at 256.5 Hours

Conditions at End of Extended Flow Hours 256.5 Rate 188 MCFD at 267 psig 25 / 10 / 73

Daily Pressure Decline 0.25 psi Deliverability at 100 psig (WHP) MCFD 240

Pressure Data: SIP Before Test, psig 579 Wellhead Pressure After 141 Hours Buildup 546 psig

Extrapolated Shut-in Pressure-Wellhead psig 595 Formation psia 628

Shut-in Wellhead Pressure Readings-psig 595 at 19 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 18.27 KH Fracture MD Ft. (Buildup Data) 45.48

KH from Production Data MD Ft. 45.53 Condition Ratio (KH Prod.) / KH Reservoir 2.4

Remarks: Completed in Atlee Buffalo/Medicine Hat. Saraband analysis invalid.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-33-16-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,340	1,465	
Resistive Feet 12 Ohm Meter-Long Normal	14	-	14
Saraband Analysis- Thickness-Feet	6	3	9
Porosity- %	15.28	14.97	15.16
Water Saturation-%	49.0	.7067	32.87
HCPV -Feet	0.467	.1318	.599

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: _____Ft.K.B. _____Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ___/___/___

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/ __

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. __ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Completed as a Milk River- Second White Specks dual.

Well Name: Alberta Suffield 11-21-16-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,494	-	
Resistive Feet 12 Ohm Meter-Long Normal	0	-	
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ___psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure ____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Potential Princess well. Completed in Milk River-Second White Specks.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-33-16-7

	A Zone	B Zone	Total
Top - Feet K.B.	1,356	-	
Resistive Feet 12 Ohm Meter-Long Normal	0	-	
Saraband Analysis- Thickness-Feet	0	0	
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,366 Ft.K.B. 1,062 Ft. SS.
Interval(s): 1356 - 1360, 1370 - 1376

Fracturing: Initial Frac Pressure 2400 psi Rate 42 B/M Final Frac Pressure 2200 psi Rate 44 B/M
Initial SI Pressure 1200 psi 15 Min. SIP 1100 psi

AOF Potential MCFD: Isochronal - 100 Hour 49 Extended 49 at 116 Hours

Conditions at End of Extended Flow Hours 116 Rate 48 MCFD at 44 psig 27 / 4 / 74

Daily Pressure Decline 9.3 psi Deliverability at 100 psig (WHP) MCFD 190

Pressure Data: SIP Before Test, psig 404 Wellhead Pressure After 24 Hours Buildup 418 psig

Extrapolated Shut-in Pressure- Wellhead psig 540 Formation psia 571

Shut-in Wellhead Pressure Readings-psig ____ at ____ / ____ / ____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 4.06 KH Fracture MD Ft. (Buildup Data) 38.85

KH from Production Data MD Ft. 9.14 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.25

Remarks: Very limited shut-in time to determine reservoir KH value. Completed in Princess Pool.

Well Name: Alberta Suffield 6-1-16-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,426	-	
Resistive Feet 12 Ohm Meter-Long Normal	10	0	10
Saraband Analysis - Thickness -Feet	1	0	1
Porosity-%	14.0		14.0
Water Saturation -%	57.0		57.0
HCPV - Feet	0.060		0.060

Perforations: Size: 2-1/8" Type: Jet No./Foot: 1-2 Mid Point: 1451.5 Ft.KB. 1114.5 Ft. SS.
Interval(s): 1431 - 1435 (2), 1438 - 1444 (1), 1456 - 1472 (1)

Fracturing: Initial Frac Pressure 2100 psi Rate 42 B/M Final Frac Pressure 1800 psi Rate 42 B/M
Initial SI Pressure 900 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal 275 100 Hour 128 Extended 128 at 96 Hours

Conditions at End of Extended Flow Hours 96 Rate 110 MCFD at 282 psig 16 / 9 / 73

Daily Pressure Decline 8.0 psi Deliverability at 100 psig (WHP) MCFD 115

Pressure Data: SIP Before Test, psig 590 Wellhead Pressure After 103.5 Hours Buildup 560 psig

Extrapolated Shut-in Pressure-Wellhead psig 590 Formation psia 624

Shut-in Wellhead Pressure Readings-psig 597 at 26 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 8.09 KH Fracture MD Ft. (Buildup Data) 23.88

KH from Production Data MD Ft. 22.37 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 0.94

Remarks: Completed in Princess Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-9-16-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,447	1,560	
Resistive Feet 12 Ohm Meter-Long Normal	4	0	4
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: _____Ft.K.B. _____Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate ____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal ____ 100 Hour ____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ___/___/___

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ _____

Remarks: Completed as a dual Milk River-Second White Specks well. Saraband analysis invalid.

Well Name: Alberta Suffield 6-33-16-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,538	1,658	
Resistive Feet 12 Ohm Meter-Long Normal	4	0	4
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1567 Ft.KB. 989 Ft. SS.
Interval(s): 1555 - 1558, 1574 - 1579

Fracturing: Initial Frac Pressure 2100psi Rate 37 B/M Final Frac Pressure 1600 psi Rate 42 B/M
Initial SI Pressure 800 psi 15 Min. SIP 750 psi

AOF Potential MCFD: Isochronal 2000 100 Hour 255 Extended 255 at 114 Hours

Conditions at End of Extended Flow Hours 114 Rate 226 MCFD at 176 psig 3 / 1 / 74

Daily Pressure Decline 14 psi Deliverability at 100 psig (WHP) MCFD 230

Pressure Data: SIP Before Test, psig 551 Wellhead Pressure After 381 Hours Buildup 513 psig

Extrapolated Shut-in Pressure-Wellhead psig 551 Formation psia 586

Shut-in Wellhead Pressure Readings-psig 526 at 26 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 5.87 KH Fracture MD Ft. (Buildup Data) 55.06

KH from Production Data MD Ft. 45.48 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 7.75

Remarks: Medicine Hat Princess Pool completion. Saraband analysis invalid.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 11-11-16-9

	A Zone	B Zone	Total
Top - Feet K.B.	1,428	1,524	
Resistive Feet 12 Ohm Meter-Long Normal	6	0	6
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: _____Ft.K.B. _____Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Saraband analysis invalid. Well completed as a dual Milk River-Second White Specks well

Well Name: Alberta Suffield 6-24-16-9

	A Zone	B Zone	Total
Top- Feet K.B.	1,366		
Resistive Feet 12 Ohm Meter-Long Normal	24		24
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate_____MCFD at _____ psig _____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Saraband analysis invalid. Poor caliper. Completed as a Milk River-Second White Specks dual.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-27-16-9

	A Zone	B Zone	Total
Top - Feet K.B.	1,421	1,536	
Resistive Feet 12 Ohm Meter-Long Normal	12	0	12
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ___ Mid Point: ___ Ft.K.B. ___ Ft. SS.
Interval(s):

Fracturing: Initial Frac Pressure ____psi Rate __ B/M Final Frac Pressure ____psi Rate ____B/M
Initial SI Pressure ____ psi ____ Min. SIP ____ psi

AOF Potential MCFD: Isochronal ____ 100 Hour ____ Extended ____ at ____ Hours

Conditions at End of Extended Flow Hours ____ Rate ____MCFD at ____ psig ___/___/___

Daily Pressure Decline ____ psi Deliverability at 100 psig(WHP) MCFD ____

Pressure Data: SIP Before Test, psig ____ Wellhead Pressure After ___Hours Buildup ____ psig

Extrapolated Shut-in Pressure- Wellhead psig ____ Formation psia ____

Shut-in Wellhead Pressure Readings-psig ___ at / /

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH / KH) _____
prod reservoir

Remarks: Saraband analysis invalid. Well completed as a Milk River-Second White Specks dual.

Well Name: Alberta Suffield 6-8-17-4

	A Zone	B Zone	Total
Top- Feet K.B.	1,401	1,503	
Resistive Feet 12 Ohm Meter-Long Normal	11	2	13
Saraband Analysis - Thickness -Feet	14	2	16
Porosity-%	14.04	11.50	13.72
Water Saturation -%	59.36	70.00	60.69
HCPV - Feet	0.798	0.0690	0.867

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1413 Ft.KB. 997 Ft. SS.
Interval(s): 1504 - 1511, 1410 - 1416

Fracturing: Initial Frac Pressure 3700 psi Rate 20 B/M Final Frac Pressure 1,650 psi Rate 41 B/M
Initial SI Pressure 650 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal 1150 100 Hour 433 Extended 433 at 117 Hours

Conditions at End of Extended Flow Hours 117 Rate 293 MCFD at 325 psig 26 / 11 / 73

Daily Pressure Decline 4.8 psi Deliverability at 100 psig (WHP) MCFD 417

Pressure Data: SIP Before Test, psig 565 Wellhead Pressure After 94.5 Hours Buildup 561 psig

Extrapolated Shut-in Pressure-Wellhead psig 565 Formation psia 598

Shut-in Wellhead Pressure Readings-psig ___ at / /

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 27.82 KH Fracture MD Ft. (Buildup Data) 52.86

KH from Production Data MD Ft. 74.13 Condition Ratio (KH Prod. / KH Reservoir) 2.66

Remarks: Atlee Buffalo/Medicine Hat and B Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-28-17-5

	A Zone	B Zone	Total
Top - Feet K.B.	1,180		
Resistive Feet 12 Ohm Meter-Long Normal	14		14
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1184 Ft.K.B. 966 Ft. SS.

Interval(s): 1181 - 1186

Fracturing: Initial Frac Pressure 4000 psi Rate 33 B/M Final Frac Pressure 1200 psi Rate 45 B/M
Initial SI Pressure 1500 psi 15 Min. SIP 1300 psi

AOF Potential MCFD: Isochronal 3630 100 Hour 742 Extended 742 at 111 Hours

Conditions at End of Extended Flow Hours 111 Rate 611 MCFD at 245 psig 19 / 2 / 74

Daily Pressure Decline 2.0 psi Deliverability at 100 psig(WHP) MCFD 720

Pressure Data: SIP Before Test, psig 591 Wellhead Pressure After 99 Hours Buildup 561 psig

Extrapolated Shut-in Pressure- Wellhead psig 610 Formation psia 641

Shut-in Wellhead Pressure Readings-psig 599.5 at 19 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 35.28 KH Fracture MD Ft.(Buildup Data) 172.18

KH from Production Data MD Ft. 108.84 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 3.08

Remarks: Atlee Buffalo/Medicine Hat Pool completion. No saraband analysis.

Well Name: Alberta Suffield 6-11-17-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,346	1,534	
Resistive Feet 12 Ohm Meter-Long Normal	8	2	10
Saraband Analysis - Thickness -Feet	14	2	16
Porosity-%	16.21	15.10	16.07
Water Saturation -%	60.29	61.58	60.45
HCPV - Feet	0.901	0.116	1.017

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ _____

Remarks: Well completed as a dual Milk River-Second White Specks well.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-28-17-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,506	-	
Resistive Feet 12 Ohm Meter-Long Normal	4	-	4
Saraband Analysis- Thickness-Feet	3	0	3
Porosity- %	13.33		13.33
Water Saturation-%	57.33		57.33
HCPV -Feet	0.1707		0.1707

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1542 Ft.K.B. 976 Ft. SS.
Interval(s): 1557 - 1562, 1522 - 1528

Fracturing: Initial Frac Pressure 1800 psi Rate 42 B/M Final Frac Pressure 1500 psi Rate 46 B/M
Initial SI Pressure 750 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal 890 100 Hour _____ Extended 268 at 91 Hours

Conditions at End of Extended Flow Hours 91 Rate 249 MCFD at 151 psig 12 / 3 / 74

Daily Pressure Decline 2.0 psi Deliverability at 100 psig (WHP) MCFD 260

Pressure Data: SIP Before Test, psig 563 Wellhead Pressure After 100 Hours Buildup 498 psig

Extrapolated Shut-in Pressure- Wellhead psig 563 Formation psia 598

Shut-in Wellhead Pressure Readings-psig 534.5 at 16 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 14.41 KH Fracture MD Ft. (Buildup Data) 80.89

KH from Production Data MD Ft. 46.48 Condition Ratio (KH Prod.) / KH Reservoir 3.23

Remarks: Atlee Buffalo/Medicine Hat Pool completion.

Well Name: Alberta Suffield 6-13-17-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,506		
Resistive Feet 12 Ohm Meter-Long Normal	0	0	0
Saraband Analysis - Thickness -Feet	10	0	10
Porosity-%	13.98	0	13.98
Water Saturation -%	49.60		49.60
HCPV - Feet	0.705		0.705

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Well completed as a dual Milk River-Second White Specks.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-28-17-7

	A Zone	B Zone	Total
Top - Feet K.B.	1,424		
Resistive Feet 12 Ohm Meter-Long Normal	3	0	3
Saraband Analysis- Thickness-Feet	0	0	0
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1451 Ft.K.B. 1033 Ft. SS.
Interval(s): 1446 - 1448, 1450 - 1456

Fracturing: Initial Frac Pressure 1800 psi Rate 46 B/M Final Frac Pressure 1500 psi Rate 50 B/M
Initial SI Pressure 800 psi 15 Min. SIP 750 psi

AOF Potential MCFD: Isochronal 500 100 Hour - Extended 85 at 163 Hours

Conditions at End of Extended Flow Hours 163 Rate 84 MCFD at 42 psig 3 / 4 / 74

Daily Pressure Decline 9.6 psi Deliverability at 100 psig(WHP) MCFD 82

Pressure Data: SIP Before Test, psig 516 Wellhead Pressure After 70 Hours Buildup 391 psig

Extrapolated Shut-in Pressure- Wellhead psig 516 Formation psia 548

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 3.76 KH Fracture MD Ft.(Buildup Data) 87.36

KH from Production Data MD Ft. 17.46 Condition Ratio (KH Prod.) / KH Reservoir 4.64

Remarks: Jenner-Medicine Hat Pool.

Well Name: Alberta Suffield 6-13-17-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,505	1,618	
Resistive Feet 12 Ohm Meter-Long Normal	2	0	2
Saraband Analysis - Thickness -Feet	8	2	10
Porosity-%	12.98	15.26	13.43
Water Saturation -%	57.88	61.00	58.50
HCPV - Feet	0.437	0.1191	.5561

Perforations: Size: ____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/ ____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Potential Princess and Medicine Hat B pool well. Well completed in 3 frac Milk River-Second White Specks.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-17-17-8

	A Zone	B Zone	Total
Top - Feet K.B.			
Resistive Feet 12 Ohm Meter-Long Normal	7		7
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/16" Type: Jet No./Foot: 2 Mid Point: 1497 Ft.K.B. 1064 Ft. SS.
Interval(s): 1485 - 1489, 1504 - 1508

Fracturing: Initial Frac Pressure 2600 psi Rate 40 B/M Final Frac Pressure 1800 psi Rate 40 B/M
Initial SI Pressure 950 psi 15 Min. SIP 250 psi

AOF Potential MCFD: Isochronal 418 100 Hour - Extended 56 at 163 Hours

Conditions at End of Extended Flow Hours 163 Rate 55 MCFD at 51 psig 6/4/74

Daily Pressure Decline 10.8 psi Deliverability at 100 psig (WHP) MCFD 54

Pressure Data: SIP Before Test, psig 512 Wellhead Pressure After 141 Hours Buildup 486 psig

Extrapolated Shut-in Pressure- Wellhead psig 572 Formation psia 606

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 5.39 KH Fracture MD Ft.(Buildup Data) 32.38

KH from Production Data MD Ft. 9.42 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 1.74

Remarks: Princess Pool, No Saraband analysis.

Well Name: Alberta Suffield 6-10-17-9

	A Zone	B Zone	Total
Top- Feet K.B.	1,415	1,534	
Resistive Feet 12 Ohm Meter-Long Normal	16	21	37
Saraband Analysis - Thickness -Feet	1	0	
Porosity-%	13.70		13.70
Water Saturation -%	40.0		40.0
HCPV - Feet	0.082		0.082

Perforations: Size: ____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ _____

Remarks: Alderson and B Pool potential. Well completed as a dual Milk River -Second White Specks.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-35-17-9

	A Zone	B Zone	Total
Top - Feet K.B.	1,506	-	
Resistive Feet 12 Ohm Meter-Long Normal	5	0	5
Saraband Analysis- Thickness-Feet	1	0	1
Porosity- %	11.90		11.90
Water Saturation-%	43.0		43.0
HCPV -Feet	0.068		0.068

Perforations: Size: _____ Type: _____ No./Foot: ___ Mid Point: _____Ft.K.B. _____Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____
Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig
Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____
KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ _____

Remarks: Princess Pool potential. Single zone Milk River completion.

Well Name: Alberta Suffield 6-10-18-4

	A Zone	B Zone	Total
Top- Feet K.B.	1,455	1,550	
Resistive Feet 12 Ohm Meter-Long Normal	10	2	12
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ___psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate_____MCFD at _____ psig _____/_____/_____
Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig
Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____
KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ _____

Remarks: Atlee Buffalo/Medicine Hat B potential. Bow Island completion.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-28-18-4

	A Zone	B Zone	Total
Top - Feet K.B.	1,330		
Resistive Feet 12 Ohm Meter-Long Normal	3		3
Saraband Analysis- Thickness-Feet	1	0	1
Porosity- %	10.50		10.50
Water Saturation-%	76.00		76.00
HCPV -Feet	0.0252		0.0252

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1355 Ft.K.B. 906 Ft. SS.
Interval(s): 1347 - 1358

Fracturing: Initial Frac Pressure 3800psi Rate 3 B/M Final Frac Pressure 3800 psi Rate 3 B/M
Initial SI Pressure - psi - Min. SIP - psi

AOF Potential MCFD: Isochronal ___ 100 Hour ___ Extended ___ at ___ Hours

Conditions at End of Extended Flow Hours ___ Rate ___MCFD at ___ psig ___/___/___

Daily Pressure Decline ___ psi Deliverability at 100 psig(WHP) MCFD ___

Pressure Data: SIP Before Test, psig ___ Wellhead Pressure After ___Hours Buildup ___ psig

Extrapolated Shut-in Pressure- Wellhead psig ___ Formation psia ___

Shut-in Wellhead Pressure Readings-psig ___ at ___ / ___ / ___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) ___ KH Fracture MD Ft.(Buildup Data) ___

KH from Production Data MD Ft. ___ Condition Ratio (KH Prod.)/KH Reservoir ___

Remarks: T.S.T.M. - Flow rate too small too measure.

Well Name: Alberta Suffield 6-15-18-5

	A Zone	B Zone	Total
Top- Feet K.B.	1,232	1,386	
Resistive Feet 12 Ohm Meter-Long Normal	2	2	4
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: ___ Type: ___ No./Foot: ___ Mid Point: ___ Ft.KB. ___ Ft. SS.
Interval s :

Fracturing: Initial Frac Pressure ___psi Rate ___B/M Final Frac Pressure ___psi Rate ___B/M
Initial SI Pressure ___ psi ___ Min. SIP ___ psi

AOF Potential MCFD: Isochronal ___ 100 Hour ___Extended ___ at ___Hours

Conditions at End of Extended Flow Hours ___ Rate___MCFD at ___ psig ___/___/___

Daily Pressure Decline ___ psi Deliverability at 100 psig (WHP) MCFD

Pressure Data: SIP Before Test, psig ___ Wellhead Pressure After ___Hours Buildup ___psig

Extrapolated Shut-in Pressure-Wellhead psig ___ Formation psia

Shut-in Wellhead Pressure Readings-psig ___ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) ___ KH Fracture MD Ft. (Buildup Data) ___

KH from Production Data MD Ft. ___ Condition Ratio (KH Prod.)/KH Reservoir ___

Remarks:

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-2-18-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,441		
Resistive Feet 12 Ohm Meter-Long Normal	0		0
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ___ Mid Point: _____Ft.K.B. _____Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate ___B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ___/___/___

Daily Pressure Decline ____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: No Medicine Hat pay indicated. Completed as a dual Milk River-Second White Specks well.

Well Name: Alberta Suffield 6-28-18-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,640	1,755	
Resistive Feet 12 Ohm Meter-Long Normal	0	0	0
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure ___psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: No Medicine Hat pay indicated. Well completed as single zone Second White Specks.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-12-18-7

	A Zone	B Zone	Total
Top - Feet K.B.	1,580		
Resistive Feet 12 Ohm Meter-Long Normal			
Saraband Analysis- Thickness-Feet	0	0	0
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ___ Mid Point: ___Ft.K.B. _____Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ___/___/___

Daily Pressure Decline _ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ___Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Questionable Medicine Hat zone.

Well Name: Alberta Suffield 6-21-18-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,560		
Resistive Feet 12 Ohm Meter-Long Normal	2	0	2
Saraband Analysis - Thickness -Feet	0	0	0
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 2-1/8"Type: Jet No./Foot: 2 Mid Point: 1584 Ft.KB. 957 Ft. SS.

Interval(s): 1572 - 1576, 1592 - 1596

Fracturing: Initial Frac Pressure 2200psi Rate 44 B/M Final Frac Pressure 1800 psi Rate 50 B/M
Initial SI Pressure 700 psi 15 Min. SIP 650 psi

AOF Potential MCFD: Isochronal - 100 Hour 95 Extended 88 at 120 Hours

Conditions at End of Extended Flow Hours 120 Rate 87 MCFD at 44 psig 25 / 4 / 74

Daily Pressure Decline 9.4 psi Deliverability at 100 psig (WHP) MCFD 84

Pressure Data: SIP Before Test, psig 559 Wellhead Pressure After 20 Hours Buildup 432 psig

Extrapolated Shut-in Pressure-Wellhead psig 559 Formation psia 594

Shut-in Wellhead Pressure Readings-psig _____ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) 10.65

KH from Production Data MD Ft. 15.49 Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Jenner Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-4-18-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,505		
Resistive Feet 12 Ohm Meter-Long Normal	0	0	0
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: _____Ft.K.B. _____Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

Remarks: No Medicine Hat pay indicated. Completed as a dual Milk River-Second White Specks wel...

Well Name: Alberta Suffield 6-19-18-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,592	0	
Resistive Feet 12 Ohm Meter-Long Normal	2	0	2
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD ____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia ____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir

Remarks: Medicine Hat potential questionable. Completed in Glauconite.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-23-18-8

	A Zone	B Zone	Total
Top - Feet K.B.			
Resistive Feet 12 Ohm Meter-Long Normal	0	0	0
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ____ Mid Point: ____ Ft.K.B. ____ Ft. SS.
Interval(s):

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure ____psi Rate ____B/M
Initial SI Pressure ____ psi ____ Min. SIP ____ psi

AOF Potential MCFD: Isochronal ____ 100 Hour ____ Extended ____ at ____ Hours

Conditions at End of Extended Flow Hours ____ Rate ____MCFD at ____ psig ____/____/____

Daily Pressure Decline ____ psi Deliverability at 100 psig(WHP) MCFD ____

Pressure Data: SIP Before Test, psig ____ Wellhead Pressure After ____Hours Buildup ____ psig

Extrapolated Shut-in Pressure- Wellhead psig ____ Formation psia ____

Shut-in Wellhead Pressure Readings-psig ____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) ____ KH Fracture MD Ft.(Buildup Data) ____

KH from Production Data MD Ft. ____ Condition Ratio (KH Prod.) / KH Reservoir ____

Remarks: No Medicine Hat pay indicated. Completed as a dual Milk River-Second White Specks well.

Well Name: Alberta Suffield 6-23-18-9

	A Zone	B Zone	Total
Top- Feet K.B.	1,505	0	
Resistive Feet 12 Ohm Meter-Long Normal	2	0	2
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 3-1/8" Type: Jet No./Foot: 2 Mid Point: 1519 Ft.KB. 1035 Ft. SS.
Interval(s): 1528 - 1532, 1506 - 1510

Fracturing: Initial Frac Pressure 2500psi Rate 35 B/M Final Frac Pressure 1300 psi Rate 35 B/M
Initial SI Pressure 800 psi 15 Min. SIP 200 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 144 at 74.5 Hours

Conditions at End of Extended Flow Hours 74.5 Rate 130 MCFD at 206 psig 27 / 4 / 74

Daily Pressure Decline 26.5 psi Deliverability at 100 psig (WHP) MCFD 134

Pressure Data: SIP Before Test, psig 604 Wellhead Pressure After 24 Hours Buildup 477 psig

Extrapolated Shut-in Pressure-Wellhead psig 623 Formation psia 659

Shut-in Wellhead Pressure Readings-psig ____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 4.46 KH Fracture MD Ft. (Buildup Data) 18.34

KH from Production Data MD Ft. 20.54 Condition Ratio (KH Prod.) / KH Reservoir 4.61

Remarks: Insufficient data to calculate 100 hour AOF potential. Princess Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-25-18-9

	A Zone	B Zone	Total
Top - Feet K.B.	1,565	0	
Resistive Feet 12 Ohm Meter-Long Normal	0	0	
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ___ Mid Point: ___ Ft.K.B. ___ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal ___ 100 Hour ___ Extended ____ at ____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ___/___/___

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. ___ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: No Medicine Hat pay indicated. Completed as a dual Milk River-Second White Specks well.

Well Name: Alberta Suffield 10-17-19-3

	A Zone	B Zone	Total
Top- Feet K.B.	1,434	1,524	
Resistive Feet 12 Ohm Meter-Long Normal	7	0	7
Saraband Analysis - Thickness -Feet	7	0	7
Porosity-%	11.67		11.67
Water Saturation -%	60.86		60.86
HCPV - Feet	0.319		0.319

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1441 Ft.KB. 843 Ft. SS.
Interval(s): 1436 - 1446

Fracturing: Initial Frac Pressure 2200 psi Rate 34 B/M Final Frac Pressure 1900 psi Rate 44 B/M
Initial SI Pressure 580 psi 15 Min. SIP 550 psi

AOF Potential MCFD: Isochronal - 100 Hour 559 Extended 559 at 115 Hours

Conditions at End of Extended Flow Hours 115 Rate 423 MCFD at 261 psig 23 / 4 / 74

Daily Pressure Decline 27 psi Deliverability at 100 psig (WHP) MCFD 530

Pressure Data: SIP Before Test, psig 509 Wellhead Pressure After 48 Hours Buildup 439 psig

Extrapolated Shut-in Pressure-Wellhead psig 509 Formation psia 540

Shut-in Wellhead Pressure Readings-psig _____ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 43.5 KH Fracture MD Ft. (Buildup Data) 247.45

KH from Production Data MD Ft. 124.109 Condition Ratio (KH Prod.) / KH Reservoir 2.85

Remarks: Atlee Buffalo/Medicine Hat Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-16-19-4

	A Zone	B Zone	Total
Top - Feet K.B.	1,264	1,342	
Resistive Feet 12 Ohm Meter-Long Normal	6	0	6
Saraband Analysis- Thickness-Feet	4	0	4
Porosity- %	12.75		12.75
Water Saturation-%	58.50		58.50
HCPV -Feet	0.2117		0.2117

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1270 Ft.K.B. 904 Ft. SS.
Interval(s): 1266 - 1274

Fracturing: Initial Frac Pressure 4200 psi Rate 17 B/M Final Frac Pressure 1700 psi Rate 46 B/M
Initial SI Pressure 650 psi 15 Min. SIP 600 psi

AOF Potential MCFD: Isochronal 1720 100 Hour 520 Extended 424 at 184.5 Hours

Conditions at End of Extended Flow Hours 184.5 Rate 371 MCFD at 230 psig 12 / 12 / 73

Daily Pressure Decline 3.6 psi Deliverability at 100 psig(WHP) MCFD 415

Pressure Data: SIP Before Test, psig 575 Wellhead Pressure After 191 Hours Buildup 525 psig

Extrapolated Shut-in Pressure- Wellhead psig 575 Formation psia 607

Shut-in Wellhead Pressure Readings-psig ____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 17.80 KH Fracture MD Ft.(Buildup Data) 105.73

KH from Production Data MD Ft. 73.46 Condition Ratio (KH Prod. / KH Reservoir) 4.12

Remarks: Atlee Buffalo/Medicine Hat Pool well.

Well Name: Alberta Suffield 6-34-19-4

	A Zone	B Zone	Total
Top- Feet K.B.	1,266	0	
Resistive Feet 12 Ohm Meter-Long Normal	10	0	10
Saraband Analysis - Thickness -Feet	8	0	8
Porosity-%	14.29		14.29
Water Saturation -%	54.75		54.75
HCPV - Feet	0.517		0.517

Perforations: Size: 3-½" Type: Jet No./Foot: 2 Mid Point: 1273 Ft.KB. 862 Ft. SS.
Interval(s): 1268 - 1278

Fracturing: Initial Frac Pressure 2300 psi Rate 43 B/M Final Frac Pressure 1300 psi Rate 41 B/M
Initial SI Pressure - psi - Min. SIP - psi

AOF Potential MCFD: Isochronal 2220 100 Hour 484 Extended 484 at 93 Hours

Conditions at End of Extended Flow Hours 93 Rate 385 MCFD at 238 psig 10 / 1 / 74

Daily Pressure Decline 2.5 psi Deliverability at 100 psig (WHP) MCFD 445

Pressure Data: SIP Before Test, psig 548 Wellhead Pressure After 1149 Hours Buildup 542 psig

Extrapolated Shut-in Pressure-Wellhead psig 548 Formation psia 578

Shut-in Wellhead Pressure Readings-psig ____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 22.45 KH Fracture MD Ft. (Buildup Data) 56.58

KH from Production Data MD Ft. 88.22 Condition Ratio (KH Prod. / KH Reservoir) 3.93

Remarks: Atlee Buffalo-Medicine Hat Pool well.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-16-19-5

	A Zone	B Zone	Total
Top - Feet K.B.	1,575	0	
Resistive Feet 12 Ohm Meter-Long Normal	3	0	3
Saraband Analysis- Thickness-Feet	5	0	5
Porosity- %	15.65		15.65
Water Saturation-%	72.60		72.60
HCPV -Feet	0.1660		0.1660

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1581 Ft.K.B. 888 Ft. SS.
Interval(s): 1577 - 1584

Fracturing: Initial Frac Pressure 2400 psi Rate 36 B/M Final Frac Pressure 1800 psi Rate 48 B/M
Initial SI Pressure 800 psi 15 Min. SIP - psi

AOF Potential MCFD: Isochronal 312 100 Hour - Extended 58.3 at 306 Hours

Conditions at End of Extended Flow Hours 306 Rate 55.7 MCFD at 137 psig 8 / 3 / 74
Daily Pressure Decline nil psi Deliverability at 100 psig (WHP) MCFD 54

Pressure Data: SIP Before Test, psig 527 Wellhead Pressure After 500 Hours Buildup 594 psig
Extrapolated Shut-in Pressure- Wellhead psig 616 Formation psia 651
Shut-in Wellhead Pressure Readings-psig 598 at 18 / 6 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 3.68 KH Fracture MD Ft. (Buildup Data) 45.59
KH from Production Data MD Ft. 8.50 Condition Ratio (KH Prod.) / KH Reservoir 2.31

Remarks: Insufficient data to calculate 100 hour AOF potential. Atlee Buffalo/Medicine Hat Pool well.

Well Name: Alberta Suffield 6-32-19-5

	A Zone	B Zone	Total
Top- Feet K.B.	1,670	0	
Resistive Feet 12 Ohm Meter-Long Normal	6	0	6
Saraband Analysis - Thickness -Feet	5	0	5
Porosity-%	11.08		11.08
Water Saturation -%	66.0		66.0
HCPV - Feet	0.188		0.188

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1678 Ft.KB. 887 Ft. SS.
Interval(s): 1673 - 1682

Fracturing: Initial Frac Pressure 2200 psi Rate 38 B/M Final Frac Pressure 1700 psi Rate 53 B/M
Initial SI Pressure 1000 psi 15 Min. SIP - psi

AOF Potential MCFD: Isochronal 2350 100 Hour - Extended 302 at 806.7 Hours

Conditions at End of Extended Flow Hours 806.7 Rate 248 MCFD at 275 psig 23 / 2 / 74
Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 281

Pressure Data: SIP Before Test, psig 505 Wellhead Pressure After 24 Hours Buildup 442 psig
Extrapolated Shut-in Pressure-Wellhead psig 580 Formation psia 616
Shut-in Wellhead Pressure Readings-psig 565.0 at 18 / 6 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 27.62 KH Fracture MD Ft. (Buildup Data) 110.74
KH from Production Data MD Ft. 52.37 Condition Ratio (KH Prod.) / KH Reservoir 1.90

Remarks: Insufficient data to calculate 100 hour AOF potential. Atlee Buffalo/Medicine Hat Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-36-19-5

	A Zone	B Zone	Total
Top - Feet K.B.	1,495	0	
Resistive Feet 12 Ohm Meter-Long Normal	8	0	8
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1500 Ft.K.B. 867 Ft. SS.
Interval(s): 1496 - 1504

Fracturing: Initial Frac Pressure 3000 psi Rate 24 B/M Final Frac Pressure 1400 psi Rate 48 B/M
Initial SI Pressure 900 psi 15 Min. SIP 775 psi

AOF Potential MCFD: Isochronal 4500 100 Hour 600 Extended 585 at 119 Hours

Conditions at End of Extended Flow Hours 119 Rate 445 MCFD at 276 psig 25 / 2 / 74
Daily Pressure Decline 15 psi Deliverability at 100 psig(WHP) MCFD 544

Pressure Data: SIP Before Test, psig 552 Wellhead Pressure After 212 Hours Buildup 545 psig
Extrapolated Shut-in Pressure- Wellhead psig 579 Formation psia 613
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) - KH Fracture MD Ft.(Buildup Data) 116.6
KH from Production Data MD Ft. 94.0 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Atlee Buffalo-Medicine Hat Pool well.

Well Name: Alberta Suffield 6-23-19-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,640	0	
Resistive Feet 12 Ohm Meter-Long Normal	4	0	4
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 3-1/8" Type: Steel Cap No./Foot: 2 Mid Point: 1645 Ft.KB. 896 Ft. SS.
Interval(s): 1641 - 1648

Fracturing: Initial Frac Pressure 3000 psi Rate 33 B/M Final Frac Pressure 2000 psi Rate 44 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal 405 100 Hour - Extended 122 at 165 Hours

Conditions at End of Extended Flow Hours 165 Rate 107 MCFD at 271 psig 7 / 4 / 74
Daily Pressure Decline 8 psi Deliverability at 100 psig (WHP) MCFD 113

Pressure Data: SIP Before Test, psig 520 Wellhead Pressure After 312.5 Hours Buildup 570 psig
Extrapolated Shut-in Pressure-Wellhead psig 589 Formation psia 625
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 7.94 KH Fracture MD Ft. (Buildup Data) 18.65
KH from Production Data MD Ft. 21.59 Condition Ratio (KH Prod.) / KH Reservoir 2.72

Remarks: Insufficient data to calculate 100 hour AOF potential. Atlee Buffalo /Medicine Hat Pool. Medicine Hat-Second White Specks well.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-29-19-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,836	0	
Resistive Feet 12 Ohm Meter-Long Normal	4	0	4
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1842 Ft.K.B. 900 Ft. SS.
Interval(s): 1837, 1846

Fracturing: Initial Frac Pressure 1800 psi Rate 45 B/M Final Frac Pressure 1600 psi Rate 48 B/M
Initial SI Pressure 850 psi 15 Min. SIP 750 psi

AOF Potential MCFD: Isochronal 2150 100 Hour _____ Extended 425 at 205 Hours

Conditions at End of Extended Flow Hours 205 Rate 359 MCFD at 220 psig 9 / 4 / 74

Daily Pressure Decline - psi Deliverability at 100 psig(WHP) MCFD 395

Pressure Data: SIP Before Test, psig 570 Wellhead Pressure After 95.5 Hours Buildup 500 psig

Extrapolated Shut-in Pressure- Wellhead psig 570 Formation psia 608

Shut-in Wellhead Pressure Readings-psig 581 at 17 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) - KH Fracture MD Ft.(Buildup Data) 96.76

KH from Production Data MD Ft. 70.87 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Atlee Buffalo/Medicine Hat Pool well.

Well Name: Alberta Suffield 6-34-19-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,714	0	
Resistive Feet 12 Ohm Meter-Long Normal	5	0	5
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1720 Ft.KB. 920 Ft. SS.
Interval(s): 1715 - 1724

Fracturing: Initial Frac Pressure 3200psi Rate 21 B/M Final Frac Pressure 1600 psi Rate 48 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 850 psi

AOF Potential MCFD: Isochronal _____ 100 Hour 428 Extended 410 at 167 Hours

Conditions at End of Extended Flow Hours 167 Rate 272 MCFD at 306 psig 17 / 4 / 74

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD 381

Pressure Data: SIP Before Test, psig 483 Wellhead Pressure After 73.5 Hours Buildup 460 psig

Extrapolated Shut-in Pressure-Wellhead psig 515 Formation psia 549

Shut-in Wellhead Pressure Readings-psig 563.0 at 18 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) - KH Fracture MD Ft. (Buildup Data) 84.86

KH from Production Data MD Ft. 87.52 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Atlee Buffalo/Medicine Hat Pool well.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-16-19-7

	A Zone	B Zone	Total
Top - Feet K.B.	1,664	0	
Resistive Feet 12 Ohm Meter-Long Normal	4	0	4
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1669 Ft.K.B. 971 Ft. SS.
Interval(s): 1664 - 1673

Fracturing: Initial Frac Pressure 2900 psi Rate 28 B/M Final Frac Pressure 2000 psi Rate 30 B/M
Initial SI Pressure 2500 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal _____ 100 Hour 390 Extended 353 at 143 Hours

Conditions at End of Extended Flow Hours 143 Rate 225 MCFD at 364 psig 11 / 4 / 74

Daily Pressure Decline 21 psi Deliverability at 100 psig (WHP) MCFD 328

Pressure Data: SIP Before Test, psig 594 Wellhead Pressure After 116.5 Hours Buildup 541 psig

Extrapolated Shut-in Pressure- Wellhead psig 594 Formation psia 631

Shut-in Wellhead Pressure Readings-psig _____ at ___ / ___ / ___

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 49.17

KH from Production Data MD Ft. 56.19 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Atlee Buffalo /Medicine Hat Pool.

Well Name: Alberta Suffield 10-22-19-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,638	0	
Resistive Feet 12 Ohm Meter-Long Normal	6	0	6
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 3-1/8" Type: Jet No./Foot: 2 Mid Point: 1645 Ft.KB. 955 Ft. SS.
Interval(s): 1642 - 1647

Fracturing: Initial Frac Pressure 2800 psi Rate 38 B/M Final Frac Pressure 1900 psi Rate 46 B/M
Initial SI Pressure 700 psi 15 Min. SIP 500 psi

AOF Potential MCFD: Isochronal - 100 Hour 555 Extended 555 at 100 Hours

Conditions at End of Extended Flow Hours 100 Rate 196 MCFD at 496 psig 11 / 4 / 74

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 516

Pressure Data: SIP Before Test, psig 587 Wellhead Pressure After 43.5 Hours Buildup 555 psig

Extrapolated Shut-in Pressure-Wellhead psig 592 Formation psia 628

Shut-in Wellhead Pressure Readings-psig _____ at ___ / ___ / ___

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 86.37

KH from Production Data MD Ft. 103.97 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Atlee Buffalo/Medicine Hat Pool. Saraband analysis invalid. Completed as a Medicine Hat-Second White Specks.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-32-19-7

	A Zone	B Zone	Total
Top - Feet K.B.	[illegible]		
Resistive Feet 12 Ohm Meter-Long Normal	8	0	8
Saraband Analysis- Thickness-Feet	4	0	4
Porosity- %	10.52		10.52
Water Saturation-%	63.50		63.50
HCPV -Feet	0.1536		0.1536

Perforations: Size: 2-1/16" Type: Jet No./Foot: 2 Mid Point: 1,641 Ft.K.B. 934 Ft. SS.
Interval(s): 1636 - 1646

Fracturing: Initial Frac Pressure 3400 psi Rate 30 B/M Final Frac Pressure 1850 psi Rate 40 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour 666 Extended 666 at 92 Hours

Conditions at End of Extended Flow Hours 92 Rate 499 MCFD at 313 psig 26 / 5 / 74

Daily Pressure Decline 9.3 psi Deliverability at 100 psig(WHP) MCFD 619

Pressure Data: SIP Before Test, psig 598 Wellhead Pressure After 72 Hours Buildup 598 psig

Extrapolated Shut-in Pressure- Wellhead psig 598 Formation psia 612

Shut-in Wellhead Pressure Readings-psig at / /

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 28.00 KH Fracture MD Ft.(Buildup Data) 109.41

KH from Production Data MD Ft. 105.61 Condition Ratio (KH Prod.) / KH Reservoir 3.77

Remarks: Atlee Buffalo

Well Name: Alberta Suffield 6-35-19-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,508	0	
Resistive Feet 12 Ohm Meter-Long Normal	9	0	9
Saraband Analysis - Thickness -Feet	9	0	9
Porosity-%	14.21		14.21
Water Saturation -%	63.23		63.23
HCPV - Feet	0.4703		0.4703

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,521 Ft.KB. 970 Ft. SS.
Interval(s): 1516 - 1526

Fracturing: Initial Frac Pressure 2700psi Rate 33 B/M Final Frac Pressure 1500 psi Rate 37 B/M
Initial SI Pressure 900 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 704 at 222.5 Hours

Conditions at End of Extended Flow Hours 222.5 Rate 508 MCFD at 315 psig 10 / 4 / 74

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 654

Pressure Data: SIP Before Test, psig 584 Wellhead Pressure After 67 Hours Buildup 515 psig

Extrapolated Shut-in Pressure-Wellhead psig 584 Formation psia 618

Shut-in Wellhead Pressure Readings-psig 589 at 17 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 39.15 KH Fracture MD Ft. (Buildup Data) 301.87

KH from Production Data MD Ft. 115.57 Condition Ratio (KH Prod.) / KH Reservoir 2.95

Remarks: Insufficient data to calculate 100 hour AOF potential. Atlee Buffalo/Medicine Hat Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-12-19-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,546		
Resistive Feet 12 Ohm Meter-Long Normal	2	0	2
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: 3-1/8" Type: Jet No./Foot: 2 Mid Point: 1,556 Ft.K.B. 970 Ft. SS.
Interval(s): 1547 - 1551, 1560 - 1564

Fracturing: Initial Frac Pressure 2900 psi Rate 31 B/M Final Frac Pressure 1900 psi Rate 16 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal - 100 Hour 93 Extended 65 at 331 Hours

Conditions at End of Extended Flow Hours 331 Rate 52 MCFD at 247 psig 13 / 4 / 74

Daily Pressure Decline 11 psi Deliverability at 100 psig(WHP) MCFD 60

Pressure Data: SIP Before Test, psig 576 Wellhead Pressure After 70.5 Hours Buildup 456 psig

Extrapolated Shut-in Pressure- Wellhead psig 576 Formation psia 610

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / FH Reservoir

Remarks: Jenner Medicine Hat Pool. Completed as a Medicine Hat- Second White Spec...

Well Name: Alberta Suffield 6-19-19-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,565		
Resistive Feet 12 Ohm Meter-Long Normal	1	0	1
Saraband Analysis - Thickness -Feet			
[illegible]			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: ____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / FH Reservoir _____

Remarks: Jenner -Medicine Hat Pool potential. Completed as a Milk River-Second White Specks dual.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-22-19-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,546	0	
Resistive Feet 12 Ohm Meter-Long Normal	3	0	3
Saraband Analysis- Thickness-Feet	2	0	2
Porosity- %	13.90		13.90
Water Saturation-%	66.0		66.
HCPV -Feet	0.094		0.094

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,550 Ft.K.B. 984 Ft. SS.
Interval(s): 1546 - 1554

Fracturing: Initial Frac Pressure 2650 psi Rate 30 B/M Final Frac Pressure 1650 psi Rate 47 B/M
Initial SI Pressure 2300 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 250 at 285.5 Hours

Conditions at End of Extended Flow Hours 285.5 Rate 184 MCFD at 297 psig 9 / 4 / 74
Daily Pressure Decline - psi Deliverability at 100 psig(WHP) MCFD 232

Pressure Data: SIP Before Test, psig 429 Wellhead Pressure After 167 Hours Buildup 470 psig
Extrapolated Shut-in Pressure- Wellhead psig 534 Formation psia 567
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 11.32 KH Fracture MD Ft.(Buildup Data) 54.79
KH from Production Data MD Ft. 51.28 Condition Ratio (KH Prod.) / KH Reservoir 4.53

Remarks: Atlee Buffalo-Medicine Hat Pool.

Well Name: Alberta Suffield 6-6-20-3

	A Zone	B Zone	Total
Top- Feet K.B.	1,322	1,410	
Resistive Feet 12 Ohm Meter-Long Normal	8	0	8
Saraband Analysis - Thickness -Feet	7	0	7
Porosity-%	11.64		11.64
Water Saturation -%	53.15		53.15
HCPV - Feet	0.3818		0.3818

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,326 Ft.KB. 842 Ft. SS.
Interval(s): 1322 - 1330

Fracturing: Initial Frac Pressure 4050 psi Rate 13 B/M Final Frac Pressure 1800 psi Rate 42 B/M
Initial SI Pressure 700 psi 15 Min. SIP - psi

AOF Potential MCFD: Isochronal 1000 100 Hour 228 Extended 208 at 159 Hours

Conditions at End of Extended Flow Hours 159 Rate 198 MCFD at 154 psig 8 / 12 / 73
Daily Pressure Decline 6 psi Deliverability at 100 psig (WHP) MCFD 203

Pressure Data: SIP Before Test, psig 588 Wellhead Pressure After 227.5 Hours Buildup 518 psig
Extrapolated Shut-in Pressure-Wellhead psig 588 Formation psia 621
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 9.23 KH Fracture MD Ft.(Buildup Data) 40.59
KH from Production Data MD Ft. 33.23 Condition Ratio (KH Prod.) / KH Reservoir 3.60

Remarks: Atlee Buffalo - Medicine Hat Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-7-20-4

	A Zone	B Zone	Total
Top - Feet K.B.	1,534		
Resistive Feet 12 Ohm Meter-Long Normal	8	0	8
Saraband Analysis- Thickness-Feet	13	0	13
Porosity- %	14.60		14.60
Water Saturation-%	62.62		62.62
HCPV -Feet	0.7095		0.7095

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1538.5 Ft.K.B. 858 Ft. SS.
Interval(s): 1535 - 1542

Fracturing: Initial Frac Pressure 1800 psi Rate 46 B/M Final Frac Pressure 1400 psi Rate 49 B/M
Initial SI Pressure 2300 psi 15 Min. SIP - psi

AOF Potential MCFD: Isochronal 3500 100 Hour 565 Extended 505 at 330 Hours

Conditions at End of Extended Flow Hours 330 Rate 405.5 MCFD at 249 psig 7/3/74

Daily Pressure Decline 15 psi Deliverability at 100 psig (WHP) MCFD 470

Pressure Data: SIP Before Test, psig 548 Wellhead Pressure After 26 Hours Buildup 414 psig

Extrapolated Shut-in Pressure- Wellhead psig 548 Formation psia 581

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 32.6 KH Fracture MD Ft.(Buildup Data) 116.6

KH from Production Data MD Ft. 93.2 Condition Ratio (KH Prod.) / KH Reservoir 2.86

Remarks: Atlee Buffalo-Medicine Hat Pool.

Well Name: Alberta Suffield 6-10-20-4

	A Zone	B Zone	Total
Top- Feet K.B.	1,294		
Resistive Feet 12 Ohm Meter-Long Normal	8	0	8
Saraband Analysis - Thickness -Feet	10	0	10
Porosity-%	13.32		13.32
Water Saturation -%	39.70		39.70
HCPV - Feet	0.5288		0.5288

Perforations: Size: ____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate ____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal ____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After ____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig ____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Atlee Buffalo-Medicine Hat Pool potential. Completed as a Milk River-Second White Specks dual.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-10-20-5

	A Zone	B Zone	Total
Top - Feet K.B.	1,528	0	
Resistive Feet 12 Ohm Meter-Long Normal	9	0	9
Saraband Analysis- Thickness-Feet	10	0	10
Porosity- %	14.61		14.61
Water Saturation-%	69.70		69.70
HCPV -Feet	0.442		0.442

Perforations: Size: 2-1/2" Type: Jet No./Foot: 2 Mid Point: 1,535 Ft.K.B. 867 Ft. SS.
Interval(s): 1531 - 1540

Fracturing: Initial Frac Pressure 2200 psi Rate 39 B/M Final Frac Pressure 1300 psi Rate 47 B/M
Initial SI Pressure 900 psi 15 Min. SIP 675 psi

AOF Potential MCFD: Isochronal 2580 100 Hour 758 Extended 505 at 306 Hours

Conditions at End of Extended Flow Hours 306 Rate 432 MCFD at 266 psig 7 / 3 / 74

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 470

Pressure Data: SIP Before Test, psig 556 Wellhead Pressure After 534 Hours Buildup 552 psig

Extrapolated Shut-in Pressure- Wellhead psig 571 Formation psia 605

Shut-in Wellhead Pressure Readings-psig 578.0 at 19 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 36.84 KH Fracture MD Ft. (Buildup Data) 194.1

KH from Production Data MD Ft. 82.9 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.52

Remarks: Atlee Buffalo/Medicine Hat Pool.

Well Name: Alberta Suffield 6-8-20-6

	A Zone	B Zone	Total
Top- Feet K.B.	1,724		
Resistive Feet 12 Ohm Meter-Long Normal	10	0	10
Saraband Analysis - Thickness -Feet	11	0	11
Porosity-%	15.43		15.43
Water Saturation -%	62.18		62.18
HCPV - Feet	0.642		0.642

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,730 Ft.KB. 1,151 Ft. SS.
Interval(s): 1726 - 1734

Fracturing: Initial Frac Pressure 2700 psi Rate 24 B/M Final Frac Pressure 1500 psi Rate 46 B/M
Initial SI Pressure 800 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 1400 at 143 Hours

Conditions at End of Extended Flow Hours 143 Rate 651 MCFD at 408 psig 16 / 4 / 74

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 1300

Pressure Data: SIP Before Test, psig 542 Wellhead Pressure After 24 Hours Buildup 495 psig

Extrapolated Shut-in Pressure-Wellhead psig 542 Formation psia 577

Shut-in Wellhead Pressure Readings-psig 548.0 at 17 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 493.73

KH from Production Data MD Ft. 286.70 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ -

Remarks: Atlee Buffalo /Medicine Hat Pool well.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-12-20-6

	A Zone	B Zone	Total
Top - Feet K.B.	1,728		
Resistive Feet 12 Ohm Meter-Long Normal	9	0	9
Saraband Analysis- Thickness-Feet	7	0	7
Porosity- %	12.51		12.51
Water Saturation-%	64.29		64.29
HCPV -Feet	0.312		0.312

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1749 Ft.K.B. 896 Ft. SS.
Interval(s): 1744-1754

Fracturing: Initial Frac Pressure 2200psi Rate 40 B/M Final Frac Pressure 1300 psi Rate 45 B/M
Initial SI Pressure 900 psi 15 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour 1.189 Extended 1.189 at 97 Hours

Conditions at End of Extended Flow Hours 97 Rate 616 MCFD at 386 psig 6 / 22 / 73
Daily Pressure Decline 0.3 psi Deliverability at 100 psig (WHP) MCFD 1.120

Pressure Data: SIP Before Test, psig 499 Wellhead Pressure After 68.5 Hours Buildup 509 psig
Extrapolated Shut-in Pressure- Wellhead psig 533 Formation psia 568
Shut-in Wellhead Pressure Readings-psig ____ at ___/___/___

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 84.50 KH Fracture MD Ft. (Buildup Data) 407.40
KH from Production Data MD Ft. 252.38 Condition Ratio (KH Prod.) / KH Reservoir 2.99

Remarks: Atlee/Buffalo Medicine Hat Well.

Well Name: Alberta Suffield 6-10-20-7

	A Zone	B Zone	Total
Top- Feet K.B.	1,502	0	
Resistive Feet 12 Ohm Meter-Long Normal	16	0	16
Saraband Analysis - Thickness -Feet	14	0	14
Porosity-%	13.27		13.27
Water Saturation -%	58.86		58.86
HCPV - Feet	0.7643		0.7643

Perforations: Size: 2-1/16" Type: Jet No./Foot: 2 Mid Point: 1512 Ft.KB. 941 Ft. SS.
Interval(s): 1506 - 1518

Fracturing: Initial Frac Pressure 3300psi Rate 33 B/M Final Frac Pressure 1800psi Rate 47 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour 1800 Extended 1670 at 186 Hours

Conditions at End of Extended Flow Hours 186 Rate 1139 MCFD at 326 psig 21 / 4 / 74
Daily Pressure Decline 5 psi Deliverability at 100 psig (WHP) MCFD 1553

Pressure Data: SIP Before Test, psig 564 Wellhead Pressure After 95 Hours Buildup 519 psig
Extrapolated Shut-in Pressure-Wellhead psig 564 Formation psia 597
Shut-in Wellhead Pressure Readings-psig 557.5 at 17 / 6 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 98.58 KH Fracture MD Ft. (Buildup Data) 289.08
KH from Production Data MD Ft. 301.56 Condition Ratio (KH Prod.) / KH Reservoir 3.06

Remarks: Atlee/Buffalo Medicine Hat Well.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 6-8-20-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,510	1,650	
Resistive Feet 12 Ohm Meter-Long Normal	6	0	6
Saraband Analysis- Thickness-Feet	1		1
Porosity- %	13.20		13.20
Water Saturation-%	77.00		77.00
HCPV -Feet	0.030		0.030

Perforations: Size: 3-1/8" Type: Jet No./Foot: 2 Mid Point: 1,523 Ft.K.B. 962 Ft. SS.
Interval(s): 1518 - 1528

Fracturing: Initial Frac Pressure 3500 psi Rate 22 B/M Final Frac Pressure 1800 psi Rate 34 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal - 100 Hour 665 Extended 665 at 94.5 Hours

Conditions at End of Extended Flow Hours 94.5 Rate 493 MCFD at 312 psig 25 / 4 / 74
Daily Pressure Decline 17.5 psi Deliverability at 100 psig (WHP) MCFD 618

Pressure Data: SIP Before Test, psig 593 Wellhead Pressure After 24 Hours Buildup 534 psig
Extrapolated Shut-in Pressure- Wellhead psig 595 Formation psia 630
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 45.87 KH Fracture MD Ft. (Buildup Data) 80.37
KH from Production Data MD Ft. 105.44 Condition Ratio (KH Prod.) / KH Reservoir 2.30

Remarks: Atlee Buffalo/Medicine Hat Pool. Completed as a Medicine Hat-Second White Specks dual.

Well Name: Alberta Suffield 6-12-20-8

	A Zone	B Zone	Total
Top- Feet K.B.	1,505	-	
Resistive Feet 12 Ohm Meter-Long Normal	12	0	12
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: 2-1/16" Type: Jet No./Foot: 2 Mid Point: 1,511 Ft.KB. 961 Ft. SS.
Interval(s): 1506 - 1516

Fracturing: Initial Frac Pressure 2200 psi Rate 42 B/M Final Frac Pressure 2000 psi Rate 42 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal 2950 100 Hour 1200 Extended 1130 at 183.5 Hours

Conditions at End of Extended Flow Hours 183.5 Rate 827 MCFD at 341 psig 22 / 4 / 74
Daily Pressure Decline 1 psi Deliverability at 100 psig (WHP) MCFD 1,050

Pressure Data: SIP Before Test, psig 557 Wellhead Pressure After 70 Hours Buildup 502 psig
Extrapolated Shut-in Pressure-Wellhead psig 557 Formation psia 590
Shut-in Wellhead Pressure Readings-psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 72.18 KH Fracture MD Ft. (Buildup Data) 271.19
KH from Production Data MD Ft. 233.84 Condition Ratio (KH Prod.) / KH Reservoir 3.24

Remarks: Atlee Buffalo/Medicine Hat Pool.

WELL INFORMATION SUMMARY
MEDICINE HAT FORMATION

Well Name: Alberta Suffield 11-16-20-8

	A Zone	B Zone	Total
Top - Feet K.B.	1,481		
Resistive Feet 12 Ohm Meter-Long Normal	6	0	6
Saraband Analysis- Thickness-Feet			
Porosity- %			
Water Saturation-%			
HCPV -Feet			

Perforations: Size: _____ Type: _____ No./Foot: ___ Mid Point: _____Ft.K.B. _____Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig(WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____ psig

Extrapolated Shut-in Pressure- Wellhead psig _____ Formation psia ____

Shut-in Wellhead Pressure Readings-psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____KH Fracture MD Ft.(Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{(KH Prod.)}}{\text{KH Reservoir}}$ _____

Remarks: Atlee Buffalo/Medicine Hat potential. No Saraband analysis. Poor cement bond indicated.

Well Name: Alberta Suffield _____

	A Zone	B Zone	Total
Top- Feet K.B.			
Resistive Feet 12 Ohm Meter-Long Normal			
Saraband Analysis - Thickness -Feet			
Porosity-%			
Water Saturation -%			
HCPV - Feet			

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.KB. _____ Ft. SS.
Interval(s): _____

Fracturing: Initial Frac Pressure ____psi Rate ____B/M Final Frac Pressure _____psi Rate _____B/M
Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____Extended _____ at _____Hours

Conditions at End of Extended Flow Hours _____ Rate____MCFD at _____ psig _____/_____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____Hours Buildup _____psig

Extrapolated Shut-in Pressure-Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings-psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. Condition Ratio $\frac{\text{(KH Prod.)}}{\text{KH Reservoir}}$ _____

Remarks: _____

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-27-15-7

Top- Feet K.B. 1,766 **Net Pay:** 5 **Ft.** Saraband Analysis- Thickness- Ft. _____ Porosity-% _____

Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,788 Ft.K.B. 533 Ft. SS.

Interval(s): 1777½ - 1779½, 1791 - 1797

Fracturing: Initial Frac Pressure 2800 psi Rate 28 B/M Final Frac Pressure 2250 psi Rate 40 B/M

Initial SI Pressure 1200 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal - 100 Hour 270 Extended 270 at 100 Hours

Conditions at End of Extended Flow Hours 100 Rate 236 MCFD at 261 psig 8 / 4 / 74

Daily Pressure Decline 6.7 psi Deliverability at 100 psig (WHP) MCFD 263

Pressure Data: SIP Before Test, psig 637 Wellhead Pressure After 121 Hours Buildup 635 psig

Extrapolated Shut-in Pressure -Wellhead psig 702 Formation psia 746

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/ ____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 10.31 KH Fracture MD Ft. (Buildup Data) 64.0

KH from Production Data MD Ft. 30.23 Condition Ratio (KH Prod.) / KH Reservoir 2.93

Remarks: Saraband analysis invalid. Poor Caliper. Alderson Pool.

Well Name: Alberta Suffield 7-15-15-8

Top- Feet K.B. 1,798 **Net Pay:** 7.5 **Ft.** Saraband Analysis- Thickness-Ft. _____ Porosity-% _____

Water Saturation-% _____ HCPV-Ft: ____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,805 Ft.K.B. 537 Ft. SS.

Interval(s): 1800 - 1809

Fracturing: Initial Frac Pressure 4000 psi Rate 14 B/M Final Frac Pressure 1800 psi Rate 30 B/M

Initial SI Pressure 2200 psi 10 Min. SIP 1600 psi

AOF Potential MCFD: Isochronal 3100 100 Hour 952 Extended 952 at 92 Hours

Conditions at End of Extended Flow Hours 92 Rate 671 MCFD at 419 psig 8 / 1 / 74

Daily Pressure Decline 4.8 psi Deliverability at 100 psig (WHP) MCFD 935

Pressure Data: SIP Before Test, psig 762 Wellhead Pressure After 217 Hours Buildup 753 psig

Extrapolated Shut-in Pressure -Wellhead psig 791 Formation psia 842

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 16.56 KH Fracture MD Ft. (Buildup Data) 124.42

KH from Production Data MD Ft. 82.42 Condition Ratio (KH Prod.) / KH Reservoir 4.98

Remarks: Alderson Pool well.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-30-15-8

Top- Feet K.B. 1,932 Net Pay: 7 Ft. Saraband Analysis- Thickness- Ft. 4 Porosity-% 12.00
Water Saturation-%: 61.75 HCPV-Ft: 0.183

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,940 Ft.K.B. 535 Ft. SS.
Interval(s): 1935 - 1944

Fracturing: Initial Frac Pressure 1800 psi Rate 41 B/M Final Frac Pressure 1800 psi Rate 45 B/M
Initial SI Pressure 1200 psi 15 Min. SIP 1100 psi

AOF Potential MCFD: Isochronal 5250 100 Hour 1011 Extended 1011 at 112 Hours

Conditions at End of Extended Flow Hours 112 Rate 690 MCFD at 430 psig 23 / 1 / 74
Daily Pressure Decline 17.6 psi Deliverability at 100 psig (WHP) MCFD 970

Pressure Data: SIP Before Test, psig 732 Wellhead Pressure After 119 Hours Buildup 725 psig
Extrapolated Shut-in Pressure -Wellhead psig 780 Formation psia 832
Shut-in Wellhead Pressure Readings- psig _____ at ___/___/___

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 24.46 KH Fracture MD Ft. (Buildup Data) 68.08
KH from Production Data MD Ft. 89.29 Condition Ratio (KH Prod.) / KH Reservoir 3.65

Remarks: Alderson Pool.

Well Name: Alberta Suffield 6-12-15-9

Top- Feet K.B. 1,882 Net Pay: 8 Ft. Saraband Analysis- Thickness-Ft. 6 Porosity-% 13.77
Water Saturation-% 44.50 HCPV-Ft: 0.458

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,899 Ft.K.B. 540 Ft. SS.
Interval(s): 1894 - 1904

Fracturing: Initial Frac Pressure 2350 psi Rate 36 B/M Final Frac Pressure 2200 psi Rate 40 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 930 psi

AOF Potential MCFD: Isochronal 8000 100 Hour 1550 Extended 1319 at 215 Hours

Conditions at End of Extended Flow Hours 215 Rate 1102 MCFD at 314 psig 19 / 1 / 74
Daily Pressure Decline 7.8 psi Deliverability at 100 psig (WHP) MCFD 1250

Pressure Data: SIP Before Test, psig 757 Wellhead Pressure After 115 Hours Buildup 677 psig
Extrapolated Shut-in Pressure -Wellhead psig 766 Formation psia 817
Shut-in Wellhead Pressure Readings- psig 715 at 18 / 4 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 35.25 KH Fracture MD Ft. (Buildup Data) 159.15
KH from Production Data MD Ft. 123.51 Condition Ratio (KH Prod.) / KH Reservoir 3.51

Remarks: Alderson Pool.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-33-16-6

Top- Feet K.B. 1,908 Net Pay: 3.0 Ft. Saraband Analysis- Thickness- Ft. 8 Porosity-% 14.28
Water Saturation-%: 59.63 HCPV-Ft: 0.461

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,920 Ft.K.B. 474 Ft. SS.
Interval(s): 1924 - 1930, 1910 - 1914

Fracturing: Initial Frac Pressure 1800 psi Rate 45 B/M Final Frac Pressure 1900 psi Rate 45 B/M
Initial SI Pressure 1200 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal - 100 Hour 120 Extended 91 at 135 Hours

Conditions at End of Extended Flow Hours 135 Rate 90 MCFD at 92 psig 17 / 3 / 74
Daily Pressure Decline 7.4 psi Deliverability at 100 psig (WHP) MCFD 88

Pressure Data: SIP Before Test, psig 735 Wellhead Pressure After 262 Hours Buildup 679 psig
Extrapolated Shut-in Pressure -Wellhead psig 740 Formation psia 789
Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 2.07 KH Fracture MD Ft. (Buildup Data) 56.92
KH from Production Data MD Ft. 8.92 Condition Ratio (KH Prod.) / KH Reservoir 4.31

Remarks: Princess Pool Completion.

Well Name: Alberta Suffield 11-21-16-7

Top- Feet K.B. 2,080 Net Pay: 1.5 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____
Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,092 Ft.K.B. 491 Ft. SS.
Interval(s): 2099-2101, 2083-2091

Fracturing: Initial Frac Pressure 3800 psi Rate 19 B/M Final Frac Pressure 2100 psi Rate 31 B/M
Initial SI Pressure 1100 psi 15 Min. SIP 950 psi

AOF Potential MCFD: Isochronal 1200 100 Hour 283 Extended 240 at 285 Hours

Conditions at End of Extended Flow Hours 285 Rate 230 MCFD at 138 psig 1 / 3 / 74
Daily Pressure Decline 4.8 psi Deliverability at 100 psig (WHP) MCFD 230

Pressure Data: SIP Before Test, psig 648 Wellhead Pressure After 357 Hours Buildup 645 psig
Extrapolated Shut-in Pressure -Wellhead psig 680 Formation psia 728
Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 10.80 KH Fracture MD Ft. (Buildup Data) 52.01
KH from Production Data MD Ft. 28.18 Condition Ratio (KH Prod.) / KH Reservoir 2.61

Remarks: Saraband analysis invalid.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-9-16-8

Top- Feet K.B. 2,056 Net Pay: 3 Ft. Saraband Analysis- Thickness- Ft. _____ Porosity-% _____
Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2064.5 Ft.K.B. 520.5 Ft. SS.
Interval(s): 2060 - 2069

Fracturing: Initial Frac Pressure 1950 psi Rate 40 B/M Final Frac Pressure 1800 psi Rate 42 B/M
Initial SI Pressure 900 psi 15 Min. SIP 875 psi

AOF Potential MCFD: Isochronal 2900 100 Hour 619 Extended 619 at 90 Hours
Conditions at End of Extended Flow Hours 90 Rate 567 MCFD at 228 psig 28 / 12 / 73
Daily Pressure Decline 15 psi Deliverability at 100 psig (WHP) MCFD 600

Pressure Data: SIP Before Test, psig 767 Wellhead Pressure After 356 Hours Buildup 708 psig
Extrapolated Shut-in Pressure -Wellhead psig 767 Formation psia 820
Shut-in Wellhead Pressure Readings- psig 732 at 26 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 18.70 KH Fracture MD Ft. (Buildup Data) 60.16
KH from Production Data MD Ft. 56.70 Condition Ratio $\frac{\text{(KH Prod.)}}{\text{KH Reservoir}}$ 3.03

Remarks: Alderson Pool. Saraband analysis invalid.

Well Name: Alberta Suffield 11-11-16-9

Top- Feet K.B. 2,022 Net Pay: 8 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____
Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,040 Ft.K.B. 510 Ft. SS.
Interval(s): 2035 - 2045

Fracturing: Initial Frac Pressure 2600 psi Rate 38 B/M Final Frac Pressure 1800 psi Rate 42 B/M
Initial SI Pressure 1000 psi 15 Min. SIP 850 psi

AOF Potential MCFD: Isochronal 3900 100 Hour 1170 Extended 1121 at 162 Hours
Conditions at End of Extended Flow Hours 162 Rate 881 MCFD at 358 psig 2 / 1 / 74
Daily Pressure Decline 6.3 psi Deliverability at 100 psig (WHP) MCFD 1070

Pressure Data: SIP Before Test, psig 767 Wellhead Pressure After 239 Hours Buildup 738 psig
Extrapolated Shut-in Pressure -Wellhead psig 770 Formation psia 823
Shut-in Wellhead Pressure Readings- psig 762 at 26 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 34.09 KH Fracture MD Ft. (Buildup Data) 91.81
KH from Production Data MD Ft. 102.68 Condition Ratio $\frac{\text{(KH Prod.)}}{\text{KH Reservoir}}$ 3.01

Remarks: Alderson Pool. Saraband analysis invalid.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-24-16-9

Top- Feet K.B. 1,988 Net Pay: 7 Ft. Saraband Analysis- Thickness- Ft. 5 Porosity-% 11.54
Water Saturation-%: 53.60 HCPV-Ft: 0.2678

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,995 Ft.K.B. 524 Ft. SS.
Interval(s): 1990 - 1999

Fracturing: Initial Frac Pressure 2800 psi Rate 36 B/M Final Frac Pressure 1800 psi Rate 48 B/M
Initial SI Pressure 1100 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal 2600 100 Hour 688 Extended 688 at 114 Hours

Conditions at End of Extended Flow Hours 114 Rate 539 MCFD at 337 psig 26 / 1 / 74
Daily Pressure Decline 7.6 psi Deliverability at 100 psig (WHP) MCFD 660

Pressure Data: SIP Before Test, psig 598 Wellhead Pressure After 192 Hours Buildup 654 psig
Extrapolated Shut-in Pressure -Wellhead psig 685 Formation psia 733
Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 27.89 KH Fracture MD Ft. (Buildup Data) 83.99
KH from Production Data MD Ft. 81.39 Condition Ratio (KH Prod.) / KH Reservoir 2.92

Remarks: Alderson Pool.

Well Name: Alberta Suffield 6-27-16-9

Top- Feet K.B. 2,034 Net Pay: 6 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____
Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 3 Mid Point: 2,050 Ft.K.B. 487 Ft. SS
Interval(s): 2047 - 2052

Fracturing: Initial Frac Pressure 2800 psi Rate 30 B/M Final Frac Pressure 1900 psi Rate 38 B/M
Initial SI Pressure 950 psi 15 Min. SIP 925 psi

AOF Potential MCFD: Isochronal 4800 100 Hour 1000 Extended 908 at 234 Hours

Conditions at End of Extended Flow Hours 234 Rate 817 MCFD at 230 psig 27 / 10 / 73
Daily Pressure Decline 5.2 psi Deliverability at 100 psig (WHP) MCFD 890

Pressure Data: SIP Before Test, psig 735 Wellhead Pressure After 118 Hours Buildup 629 psig
Extrapolated Shut-in Pressure -Wellhead psig 735 Formation psia 786
Shut-in Wellhead Pressure Readings- psig 749 at 26 / 4 / 74

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 19.09 KH Fracture MD Ft. (Buildup Data) 102.92
KH from Production Data MD Ft. 89.67. Condition Ratio (KH Prod.) / KH Reservoir 4.69

Remarks: Alderson Pool. Saraband analysis invalid.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-11-17-6

Top- Feet K.B. 1,903 Net Pay: 2 Ft. Saraband Analysis- Thickness- Ft. 10 Porosity-% 16.93
Water Saturation-%: 64.80 HCPV-Ft: 0.596

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: _____ Ft.K.B. _____ Ft. SS.
Interval(s): 1908 - 1917, 1928 - 1930

Fracturing: Initial Frac Pressure 3800 psi Rate 20 B/M Final Frac Pressure 2300 psi Rate 32 B/M
Initial SI Pressure 1400 psi 15 Min. SIP 1100 psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____
Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig
Extrapolated Shut-in Pressure -Wellhead psig _____ Formation psia _____
Shut-in Wellhead Pressure Readings- psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____
KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Princess Pool completion. T.S.T.M. Flow rate too small to measure.

Well Name: Alberta Suffield 6-13-17-7

Top- Feet K.B. 2,078 Net Pay: 7 Ft. Saraband Analysis- Thickness-Ft. 7 Porosity-% 13
Water Saturation-% 62.57 HCPV-Ft: 0.

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,093 Ft.K.B. 443 Ft. SS.
Interval(s): 2081 - 2085, 2098 - 2104

Fracturing: Initial Frac Pressure 3000 psi Rate 28 B/M Final Frac Pressure 2600 psi Rate 40 B/M
Initial SI Pressure 1400 psi 15 Min. SIP 1300 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 74 at 72 Hours

Conditions at End of Extended Flow Hours 72 Rate 73 MCFD at 74 psig 23 / 4 / 74
Daily Pressure Decline 23 psi Deliverability at 100 psig (WHP) MCFD 71

Pressure Data: SIP Before Test, psig 551 Wellhead Pressure After 48 Hours Buildup 424 psig
Extrapolated Shut-in Pressure -Wellhead psig 680 Formation psia 728
Shut-in Wellhead Pressure Readings- psig _____ at ____/____/____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 30.69
KH from Production Data MD Ft. 8.54 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Damaged well, Princess Pool

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-13-17-8

Top- Feet K.B. 2,080 Net Pay: 3 Ft. Saraband Analysis- Thickness- Ft. 9 Porosity-% 15.02
Water Saturation-%: 59.23 HCPV-Ft: 0.551

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,094 Ft.K.B. 482 Ft. SS.
Interval(s): 2082 - 2086, 2096 - 2100

Fracturing: Initial Frac Pressure 3200psi Rate 25 B/M Final Frac Pressure 1800 psi Rate 30 B/M
Initial SI Pressure 1000psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour 224 Extended 224 at 118 Hours
Conditions at End of Extended Flow Hours 118 Rate 216 MCFD at 131 psig 26 / 4 / 74
Daily Pressure Decline 16.5 psi Deliverability at 100 psig (WHP) MCFD 200

Pressure Data: SIP Before Test, psig 650 Wellhead Pressure After 24 Hours Buildup 583 psig
Extrapolated Shut-in Pressure -Wellhead psig 680 Formation psia 728
Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/ ____

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) 32.44 KH Fracture MD Ft. (Buildup Data) 57.73
KH from Production Data MD Ft. 25.91 Condition Ratio (KH Prod.) / KH Reservoir 0.80

Remarks: Princess Pool completion.

Well Name: Alberta Suffield 6-10-17-9

Top- Feet K.B. 2,024 Net Pay: 1 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____
Water Saturation-%_____ HCPV-Ft:_____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,995 Ft.K.B. 524 Ft. SS.
Interval(s): 2040 - 2049, 2025 - 2029

Fracturing: Initial Frac Pressure 1700 psi Rate 45 B/M Final Frac Pressure 1700 psi Rate 45 B/M
Initial SI Pressure 1100 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal 1670 100 Hour 338 Extended 338 at 110 Hours
Conditions at End of Extended Flow Hours 110 Rate 313 MCFD at 189 psig 27 / 1 / 74
Daily Pressure Decline nil psi Deliverability at 100 psig (WHP) MCFD 325

Pressure Data: SIP Before Test, psig 687 Wellhead Pressure After 192 Hours Buildup 683 psig
Extrapolated Shut-in Pressure -Wellhead psig 715 Formation psia 766
Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 27.89 KH Fracture MD Ft. (Buildup Data) 83.99
KH from Production Data MD Ft. 81.39 Condition Ratio (KH Prod.) / KH Reservoir 2.92

Remarks: Alderson Pool.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-10-18-4

Top- Feet K.B. 1,945 Net Pay: - Ft. Saraband Analysis- Thickness- Ft. _____ Porosity-% _____

Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____Ft.K.B. _____Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure_____psi Rate _____B/M

Initial SI Pressure _____psi _____Min. SIP _____psi

AOF Potential MCFD: Isochronal _____ 100 Hour ____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate_____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD ____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure -Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: No indicated Second White Specks potential.

Well Name: Alberta Suffield 6-15-18-5

Top- Feet K.B. 1,745 Net Pay: 1.5 Ft. Saraband Analysis- Thickness-Ft. _____Porosity-% _

Water Saturation-%_____ HCPV-Ft: ____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,756 Ft.K.B. 408 Ft. SS.

Interval(s): 1745 - 1750, 1761 - 1766

Fracturing: Initial Frac Pressure 3300 psi Rate 22 B/M Final Frac Pressure 2500 psi Rate 43 B/M

Initial SI Pressure 2000 psi 15 Min. SIP 1600 psi

AOF Potential MCFD: Isochronal - 100 Hour 95 Extended 95 at 95 Hours

Conditions at End of Extended Flow Hours 95 Rate 93 MCFD at 97 psig 22 / 4 / 74

Daily Pressure Decline 32 psi Deliverability at 100 psig (WHP) MCFD 92

Pressure Data: SIP Before Test, psig 775 Wellhead Pressure After 72 Hours Buildup 642 psig

Extrapolated Shut-in Pressure -Wellhead psig 775 Formation psia 822

Shut-in Wellhead Pressure Readings- psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 3.45 KH Fracture MD Ft. (Buildup Data) 17.61

KH from Production Data MD Ft. 8.41 Condition Ratio (KH Prod.) / KH Reservoir 2.43

Remarks: Princess Pool.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-2-18-6

Top- Feet K.B. 1,982 **Net Pay:** 2.5 **Ft.** Saraband Analysis- Thickness- Ft. _____ Porosity-% _____

Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,995 Ft.K.B. 418 Ft. SS.

Interval(s): 1984 - 1990, 2000 - 2006

Fracturing: Initial Frac Pressure 4000 psi Rate 10 B/M Final Frac Pressure 3200 psi Rate 21 B/M

Initial SI Pressure 2000 psi 15 Min. SIP 900 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 6 at 196 Hours

Conditions at End of Extended Flow Hours 196 Rate 6 MCFD at 51 psig 1 / 3 / 74

Daily Pressure Decline 3.0 psi Deliverability at 100 psig (WHP) MCFD 5.7

Pressure Data: SIP Before Test, psig 669 Wellhead Pressure After 166 Hours Buildup 598 psig

Extrapolated Shut-in Pressure -Wellhead psig 678 Formation psia 725

Shut-in Wellhead Pressure Readings- psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 0.31 KH Fracture MD Ft. (Buildup Data) 2.10

KH from Production Data MD Ft. 0.70 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.25

Remarks: Princess Pool, poor well.

Well Name: Alberta Suffield 6-28-18-6

Top- Feet K.B. 2,180 **Net Pay:** 5 **Ft.** Saraband Analysis- Thickness-Ft. _____ Porosity-% _____

Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 4 Mid Point: 2,192 Ft.K.B. 389 Ft. SS.

Interval(s): 2180 - 2186, 2198 - 2204

Fracturing: Initial Frac Pressure 4700 psi Rate 46 B/M Final Frac Pressure 4700 psi Rate 46 B/M

Initial SI Pressure 1100 psi 15 Min. SIP 700 psi

AOF Potential MCFD: Isochronal 1500 100 Hour 165 Extended 158 at 112 Hours

Conditions at End of Extended Flow Hours 112 Rate 100 MCFD at 481 psig 1 / 4 / 74

Daily Pressure Decline 49 psi Deliverability at 100 psig (WHP) MCFD 145

Pressure Data: SIP Before Test, psig 740 Wellhead Pressure After 98.5 Hours Buildup 681 psig

Extrapolated Shut-in Pressure -Wellhead psig 740 Formation psia 792

Shut-in Wellhead Pressure Readings- psig 765.0 at 17 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 12.75

KH from Production Data MD Ft. 18.32 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ -

Remarks: Princess Pool.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6 -4-18-8

Top- Feet K.B. 2,088 Net Pay: 3 Ft. Saraband Analysis- Thickness- Ft. _____ Porosity-% _____

Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,107 Ft.K.B. 4[illegible] Ft. SS.

Interval(s): 2096 - 2100, 2114 - 2118

Fracturing: Initial Frac Pressure 3100 psi Rate 27 B/M Final Frac Pressure 1700 psi Rate 40 B/M

Initial SI Pressure 800 psi 10 Min. SIP 800 psi

AOF Potential MCFD: Isochronal - 100 Hour 62 Extended 62 at 94 Hours

Conditions at End of Extended Flow Hours 94 Rate 61 MCFD at 59 psig 3 / 4 / 74

Daily Pressure Decline 20.9 psi Deliverability at 100 psig (WHP) MCFD [illegible]

Pressure Data: SIP Before Test, psig 610 Wellhead Pressure After 50 Hours Buildup 347 psig

Extrapolated Shut-in Pressure -Wellhead psig 610 Formation psia 655

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/ _____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) - KH Fracture MD Ft. (Buildup Data) [illegible]

KH from Production Data MD Ft. 8.81 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Princess Pool.

Well Name: Alberta Suffield 6-19-18-8

Top- Feet K.B. 2,174 Net Pay: 2.5 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____

Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M

Initial SI Pressure _____psi _____Min. SIP _____psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____psig

Extrapolated Shut-in Pressure -Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings- psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: Potential in Princess Pool. Completed in Glauconite.

WELL INFORMATION
SECOND WHITE SPECKS F

Well Name: Alberta Suffield 6-23-18-8

Top- Feet K.B. 2,133 Net Pay: 2.5 Ft. Saraband Analysis- Thickness- Ft. 7 Porosity-% 17.67
Water Saturation-%: 48.29 HCPV-Ft: 0.639

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,148 Ft.K.B. 435 Ft. SS.
Interval(s): 2136 - 2140, 2155 - 2159

Fracturing: Initial Frac Pressure 3100 psi Rate 29 B/M Final Frac Pressure 2100 psi Rate 48 B/M
Initial SI Pressure 1100 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal 825 100 Hour 102 Extended 90 at 376 Hours

Conditions at End of Extended Flow Hours 376 Rate 78 MCFD at 201 psig 15 / 4 / 74
Daily Pressure Decline 1 psi Deliverability at 100 psig (WHP) MCFD 84

Pressure Data: SIP Before Test, psig 418 Wellhead Pressure After 27.5 Hours Buildup 342 psig
Extrapolated Shut-in Pressure -Wellhead psig 539 Formation psia 579
Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/

Reservoir Capacity Calculations:
KH Reservoir MD Ft.(Buildup Data) - KH Fracture MD Ft. (Buildup Data) 18.90
KH from Production Data MD Ft. 17.84 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Princess Pool well.

Well Name: Alberta Suffield 6-23-18-9

Top- Feet K.B. 2,085 Net Pay: 4 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____
Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,097 Ft.K.B. 457 Ft. SS.
Interval(s): 2086 - 2090, 2103 - 2107

Fracturing: Initial Frac Pressure 3700 psi Rate 22 B/M Final Frac Pressure 1500 psi Rate 49 B/M
Initial SI Pressure 600 psi 15 Min. SIP 400 psi

AOF Potential MCFD: Isochronal - 100 Hour 127 Extended 127 at 99 Hours

Conditions at End of Extended Flow Hours 99 Rate 98 MCFD at 250 psig _____/_____/_____
Daily Pressure Decline 9 psi Deliverability at 100 psig (WHP) MCFD 118

Pressure Data: SIP Before Test, psig 465 Wellhead Pressure After 23.5 Hours Buildup 422 psig
Extrapolated Shut-in Pressure -Wellhead psig 541 Formation psia 581
Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:
KH Reservoir MD Ft. (Buildup Data) 16.16 KH Fracture MD Ft. (Buildup Data) 53.53
KH from Production Data MD Ft. 70.57 Condition Ratio (KH Prod.) / KH Reservoir 4.37

Remarks: Princess Pool.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-35-18-9

Top- Feet K.B. 2,158 **Net Pay:** 5 Ft. **Saraband Analysis- Thickness- Ft.** _____ **Porosity-%** _____

Water Saturation-%: _____ **HCPV-Ft:** _____

Perforations: **Size:** 2-1/8" **Type:** Jet **No./Foot:** 2 **Mid Point:** 2,097 **Ft.K.B.** 457 **Ft. SS.**

Interval(s): 2160 -2164, 2172 - 2276, 2176 - 2187

Fracturing: **Initial Frac Pressure** 3500 psi **Rate** 15 B/M **Final Frac Pressure** 3000 psi **Rate** 22 B/M

Initial SI Pressure 1500 psi 15 **Min. SIP** 900 psi

AOF Potential MCFD: **Isochronal** - **100 Hour** 45 **Extended** 45 **at** 115 **Hours**

Conditions at End of Extended Flow **Hours** 115 **Rate** 41 **MCFD at** 196 psig 26 / 4 / 74

Daily Pressure Decline 14 psi **Deliverability at 100 psig (WHP) MCFD** 41

Pressure Data: **SIP Before Test, psig** 605 **Wellhead Pressure After** 23 **Hours Buildup** 570 psig

Extrapolated Shut-in Pressure -Wellhead psig 605 **Formation psia** 650

Shut-in Wellhead Pressure Readings- psig _____ **at** _____/ __/ __

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 7.49 **KH Fracture MD Ft. (Buildup Data)** 17.80

KH from Production Data MD Ft. 6.99 **Condition Ratio** (KH Prod. / KH Reservoir) 0.93

Remarks: Poor fracture. Princess Pool.

Well Name: Alberta Suffield 6-23-19-6

Top- Feet K.B. 2,168 **Net Pay:** _____ Ft. **Saraband Analysis- Thickness-Ft.** _____ **Porosity-%**

Water Saturation-% _____ **HCPV-Ft:**

Perforations: **Size:** 2-1/8" **Type:** Jet **No./Foot:** 2 **Mid Point:** 2,178 **Ft.K.B.** 353 **Ft. SS.**

Interval(s): 2169 - 2171, 2177-2178, 2185 -2187

Fracturing: **Initial Frac Pressure** 3800 psi **Rate** 14 B/M **Final Frac Pressure** 2600 psi **Rate** 18 B/M

Initial SI Pressure 1100 psi 15 **Min. SIP** 900 psi

AOF Potential MCFD: **Isochronal** _____ **100 Hour** _____ **Extended** _____ **at** _____ **Hours**

Conditions at End of Extended Flow **Hours** _____ **Rate** _____ **MCFD at** _____ psig ____/____/____

Daily Pressure Decline _____ psi **Deliverability at 100 psig (WHP) MCFD** _____

Pressure Data: **SIP Before Test, psig** _____ **Wellhead Pressure After** _____ **Hours Buildup** _____ psig

Extrapolated Shut-in Pressure -Wellhead psig _____ **Formation psia** _____

Shut-in Wellhead Pressure Readings- psig _____ **at** ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ **KH Fracture MD Ft. (Buildup Data)** _____

KH from Production Data MD Ft. _____ **Condition Ratio** (KH Prod. / KH Reservoir) _____

Remarks: T.S.T.M. Flow rate too small to measure.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-29-19-6

Top- Feet K.B. 2,374 Net Pay: 0 Ft. Saraband Analysis- Thickness- Ft. _____ Porosity-% _____

Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ___/___/___

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure -Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: No indicated pay.

Well Name: Alberta Suffield 10-22-19-7

Top- Feet K.B. 2,186 Net Pay: 2 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____

Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,207 Ft.K.B. 393 Ft. SS.

Interval(s): [illegible]

Fracturing: Initial Frac Pressure 2650 psi Rate 36 B/M Final Frac Pressure 2050 psi Rate 46 B/M

Initial SI Pressure 900 psi 15 Min. SIP 750 psi

AOF Potential MCFD: Isochronal - 100 Hour 57 Extended 57 at 100 Hours

Conditions at End of Extended Flow Hours 100 Rate 50 MCFD at 240 psig 11 / 4 / 74

Daily Pressure Decline nil psi Deliverability at 100 psig (WHP) MCFD 53

Pressure Data: SIP Before Test, psig 755 Wellhead Pressure After 42 Hours Buildup 565 psig

Extrapolated Shut-in Pressure -Wellhead psig 755 Formation psia 808

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) - KH Fracture MD Ft. (Buildup Data) 3.13

KH from Production Data MD Ft. 5.81 Condition Ratio (KH Prod.) / KH Reservoir -

Remarks: Princess Pool. Saraband analysis invalid.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-12-19-8

Top- Feet K.B. 2,105 Net Pay: 4 Ft. Saraband Analysis- Thickness- Ft. _____ Porosity-% _____

Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,123 Ft.K.B. 403 Ft. SS.

Interval(s): 2113 - 2117, 2128 - 2132

Fracturing: Initial Frac Pressure 3100 psi Rate 23 B/M Final Frac Pressure 1,950 psi Rate 39 B/M

Initial SI Pressure 1000 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 183 at 361 Hours

Conditions at End of Extended Flow Hours 361 Rate 159 MCFD at 258 psig 13 / 4 / 74

Daily Pressure Decline 14 psi Deliverability at 100 psig (WHP) MCFD 171

Pressure Data: SIP Before Test, psig 756 Wellhead Pressure After 70.5 Hours Buildup 610 psig

Extrapolated Shut-in Pressure -Wellhead psig 756 Formation psia 808

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/__

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) - KH Fracture MD Ft. (Buildup Data) 24.70

KH from Production Data MD Ft. 18.22 Condition Ratio (KH Prod. / KH Reservoir) -

Remarks: Princess Pool. Saraband invalid.

Well Name: Alberta Suffield 6-19-19-8

Top- Feet K.B. 2,165 Net Pay: 4 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-%

Water Saturation-% HCPV-Ft:

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,178 Ft.K.B. 394 Ft. SS.

Interval(s): 2168 - 2172, 2182 - 2188

Fracturing: Initial Frac Pressure 3300 psi Rate 25 B/M Final Frac Pressure 1900 psi Rate 33 B/M

Initial SI Pressure 2050 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 147 at 140 Hours

Conditions at End of Extended Flow Hours 140 Rate 94 MCFD at 453 psig 9 / 4 / 74

Daily Pressure Decline nil psi Deliverability at 100 psig (WHP) MCFD 137

Pressure Data: SIP Before Test, psig 771 Wellhead Pressure After 191 Hours Buildup 755 psig

Extrapolated Shut-in Pressure -Wellhead psig 771 Formation psia 825

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 9.04 KH Fracture MD Ft. (Buildup Data) 15.35

KH from Production Data MD Ft. 13.67 Condition Ratio (KH Prod. / KH Reservoir) 1.51

Remarks: Insufficient data to calculate 100 hour AOF potential. Princess Pool Well. Saraband invalid.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-10-20-4

Top- Feet K.B. 1,776 Net Pay: 2 Ft. Saraband Analysis- Thickness- Ft. 4 Porosity-% 16.92

Water Saturation-%: 62.25 HCPV-Ft: 0.2555

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 1,790 Ft.K.B. 623 Ft. SS.

Interval(s): 1786 - 1794

Fracturing: Initial Frac Pressure 3800 psi Rate 10 B/M Final Frac Pressure 1500 psi Rate 30 B/M

Initial SI Pressure 850 psi 10 Min. SIP 850 psi

AOF Potential MCFD: Isochronal - 100 Hour - Extended 29 at 72 Hours

Conditions at End of Extended Flow Hours 72 Rate 29 MCFD at 6 psig 25 / 4 / 74

Daily Pressure Decline 2.4 psi Deliverability at 100 psig (WHP) MCFD 27

Pressure Data: SIP Before Test, psig 637 Wellhead Pressure After 24 Hours Buildup 283 psig

Extrapolated Shut-in Pressure -Wellhead psig 637 Formation psia 678

Shut-in Wellhead Pressure Readings- psig 725.0 at 19 / 6 / 74

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 1.61 KH Fracture MD Ft. (Buildup Data) 48.88

KH from Production Data MD Ft. 3.86 Condition Ratio (KH Prod.) / KH Reservoir 2.40

Remarks: KH of reservoir possibly inaccurate due to limited readings taken during buildup period. Non commercial well Bow Island -2178'

Well Name: Alberta Suffield 6-8-20-6

Top- Feet K.B. 2,262 Net Pay: _____ Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____

Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____ psi Rate _____ B/M Final Frac Pressure _____ psi Rate _____ B/M

Initial SI Pressure _____ psi _____ Min. SIP _____ psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____ MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____ psig

Extrapolated Shut-in Pressure -Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings- psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio (KH Prod.) / KH Reservoir _____

Remarks: No Second White Specks pay indicated.

WELL INFORMATION SUMMARY
SECOND WHITE SPECKS FORMATION

Well Name: Alberta Suffield 6-8-20-8

Top- Feet K.B. 2,102 Net Pay: 2.5 Ft. Saraband Analysis- Thickness- Ft. _____ Porosity-% _____

Water Saturation-%: _____ HCPV-Ft: _____

Perforations: Size: 2-1/8" Type: Jet No./Foot: 2 Mid Point: 2,114 Ft.K.B. 371 Ft. SS.

Interval(s): 2104 - 2108, 2120 - 2124

Fracturing: Initial Frac Pressure 3900 psi Rate 23 B/M Final Frac Pressure 2000 psi Rate 31 B/M

Initial SI Pressure 1000 psi 15 Min. SIP 1000 psi

AOF Potential MCFD: Isochronal 450 100 Hour 58 Extended 58 at 131.5 Hours

Conditions at End of Extended Flow Hours 131.5 Rate 498 MCFD at 249 psig 25 / 4 / 74

Daily Pressure Decline 10.5 psi Deliverability at 100 psig (WHP) MCFD 54

Pressure Data: SIP Before Test, psig 632 Wellhead Pressure After 24 Hours Buildup 559 psig

Extrapolated Shut-in Pressure -Wellhead psig 645 Formation psia 691

Shut-in Wellhead Pressure Readings- psig _____ at _____/_____/_____

Reservoir Capacity Calculations:

KH Reservoir MD Ft.(Buildup Data) 3.77 KH Fracture MD Ft. (Buildup Data) 4.29

KH from Production Data MD Ft. 8.05 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 2.13

Remarks: Princess Pool.

Well Name: Alberta Suffield 11-16-20-8

Top- Feet K.B. 2,052 Net Pay: 3 Ft. Saraband Analysis- Thickness-Ft. _____ Porosity-% _____

Water Saturation-% _____ HCPV-Ft: _____

Perforations: Size: _____ Type: _____ No./Foot: _____ Mid Point: _____ Ft.K.B. _____ Ft. SS.

Interval(s): _____

Fracturing: Initial Frac Pressure _____psi Rate _____B/M Final Frac Pressure _____psi Rate _____B/M

Initial SI Pressure _____psi _____Min. SIP _____psi

AOF Potential MCFD: Isochronal _____ 100 Hour _____ Extended _____ at _____ Hours

Conditions at End of Extended Flow Hours _____ Rate _____MCFD at _____ psig ____/____/____

Daily Pressure Decline _____ psi Deliverability at 100 psig (WHP) MCFD _____

Pressure Data: SIP Before Test, psig _____ Wellhead Pressure After _____ Hours Buildup _____psig

Extrapolated Shut-in Pressure -Wellhead psig _____ Formation psia _____

Shut-in Wellhead Pressure Readings- psig _____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) _____ KH Fracture MD Ft. (Buildup Data) _____

KH from Production Data MD Ft. _____ Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ _____

Remarks: Princess Pool potential - no Saraband analysis.

WELL INFORMATION SUMMARY
BOW ISLAND FORMATION

Well Name: Alberta Suffield 6-10-18-4

Top - Feet K.B. 2,318

Net Pay - Feet 5

Perforations: Size: 1-11/16" Type: Jet No./Foot:2 Mid Point: 2,322 Ft.K.B. -82 Ft. SS.

Interval: 2319 - 2324

AOF Potential MCFD: Isochronal 3500 100 Hour - Extended 1320 at 48 Hours

Conditions at End of Extended Flow Hours 48 Rate 660 MCFD at 730 psig 21/ 12/ 73

Daily Pressure Decline - psi Deliverability at 100 psig (WHP) MCFD 1,280

Pressure Data: SIP Before Test, psig 910 Wellhead Pressure After 160 Hours Buildup 930 psig

Extrapolated Shut-in Pressure-Wellhead psig 940 Formation psia 1,012

Shut-in Wellhead Pressure Readings - psig ____ at ____/____/____

Reservoir Capacity Calculations:

KH Reservoir MD Ft. (Buildup Data) 56.51 KH Fracture MD Ft. (Buildup Data) 172.27

KH from Production Data MD Ft. 94.40 Condition Ratio $\frac{\text{KH Prod.}}{\text{KH Reservoir}}$ 1.67

Remarks: No Fracturing Required.

WELL INFORMATION SUMMARY
GLAUCONITE FORMATION

Well Name: Alberta Suffield 11-16-20-8

Top - Feet K.B. 3,019

Indicated Pay - Feet 60 feet gross, 40 feet net

Perforations: Size 1-11/16" Type: Ceramic No./Foot: 2 Mid Point: 3027.5 Ft. KB. -556.5 Ft. SS
Interval(s): 3020 - 3035

Remarks: Well produced fresh water. Ran bridge plug- set at 3002 feet KB.; cemented with six bags on top. Potential Medicine Hat Zone but completion should be carefully reviewed due to poor cement bond.

Well Name: Alberta Suffield 6-19-18-8

Top - Feet K.B. 3,222

Indicated Pay - Feet 24

Perforations: Size 1-11/16" Type: Jet No./Foot: 2 Mid Point: 3224.5 Ft. K.B. -599.5 Ft. SS.
Interval(s): 3222 - 3227

AOF Potential MCFD: Isochronal 63,000 100 Hour _____ Extended 60,000 at 39.25 Hours

Conditions at End of Extended Flow Hours 39.25 Rate 21.76 MCFD at 535 psig 2/ 4 / 74

Pressure Data: SIP Before Test, psig 1,387 Wellhead Pressure After ___ Hours Buildup 1,387 psig
Extrapolated Shut-in Pressure-Wellhead psig 1,387 Formation psia 1,520

SUFFIELD EVALUATION DRILLING PROGRAM
DEEP ZONE TESTS

Location	K.B.	Milk River	First White Specks	Medicine Hat	Second White Specks	BFS	Bow Island	Basal Colorado	Glauc.	Ost.	Basal Quartz	Paleozoic
6-27-15-7	2321	767 +1554	1082 +1239	1189 +1132	1777 + 544	2003 + 318	2321 + 122	N.P.				
11-21-16-7	2583	1074 +1509	1390 +1193	1495 +1088	2080 + 503	2306 + 277	2506 + 77	2844 - 261	3185 -602	3277	3309	3406 -823
6-24-16-9	2519	947 +1572	1260 +1259	1367 +1152	1987 + 532	2212 + 307	2399 + 120	N.P.				
6-10-17-9	2517	992 +1525	1303 +1214	1413 +1104	2040 + 477	2256 + 261	2452 + 65	2779 - 262	N.P.			
6-10-18-4	2403	1012 +1391	1366 +1037	1454 + 949	1945 + 458	2127 + 276	2318 + 85	2678 - 275	N.P.			2990 -587
6- 2-18-6	2413	1006 +1407	1346 +1067	1444 + 969	1983 + 430	2184 + 229	2379 + 34	N.P.				
6-19-18-8	2625	1168 +1457	1480 +1145	1593 +1032	2174 + 451	2380 + 245	2559 + 66	2893 - 268	3220 -595	3262 -637	3298 -673	3362 -737
6-35-18-9	2611	1140 +1471	1465 +1146	1572 +1039	2158 + 453	2368 + 243	2545 + 66	2895 - 284	N.P.			
6-23-19-6	2541	1194 +1347	1550 + 991	1635 + 906	2166 + 375	2360 + 181	2542 - 1	N.P.				
6-29-19-6	2742	1400 +1342	1745 + 997	1835 + 907	2372 + 370	2576 + 166	2760 - 18	3100 - 358	3420 -678	3470 -728	3500 -758	3560 -818
10-22-19-7	2600	1210 +1390	1543 +1057	1640 + 960	2186 + 414	2400 + 200	2581 + 19	2913 - 313	N.P.			
6-12-19-8	2526	1112 +1414	1450 +1076	1544 + 982	2104 + 422	2315 + 211	2492 + 34	2834 - 308	N.P. N.P.			
6-10-20-4	2150	832 +1318	1206 + 944	1295 + 855	1777 + 373	1972 + 178	2177 - 27	N.P.				
6- 8-20-6	2640	1288 +1352	1632 +1008	1715 + 925	2262 + 378	2464 + 176	2640 0	2987 - 347	N.P.			
6- 8-20-8	2485	1090 +1395	1416 +1069	1510 + 975	2102 + 383	2307 + 178	2478 + 7	2806 - 321	3125 - 640	3145 -660	3154 -669	3223 -738
11-16-20-8	2466	1057 +1409	1384 +1082	1482 + 984	2055 + 411	2262 + 204	2436 + 30	2752 - 286	3019	3108	3115	3145

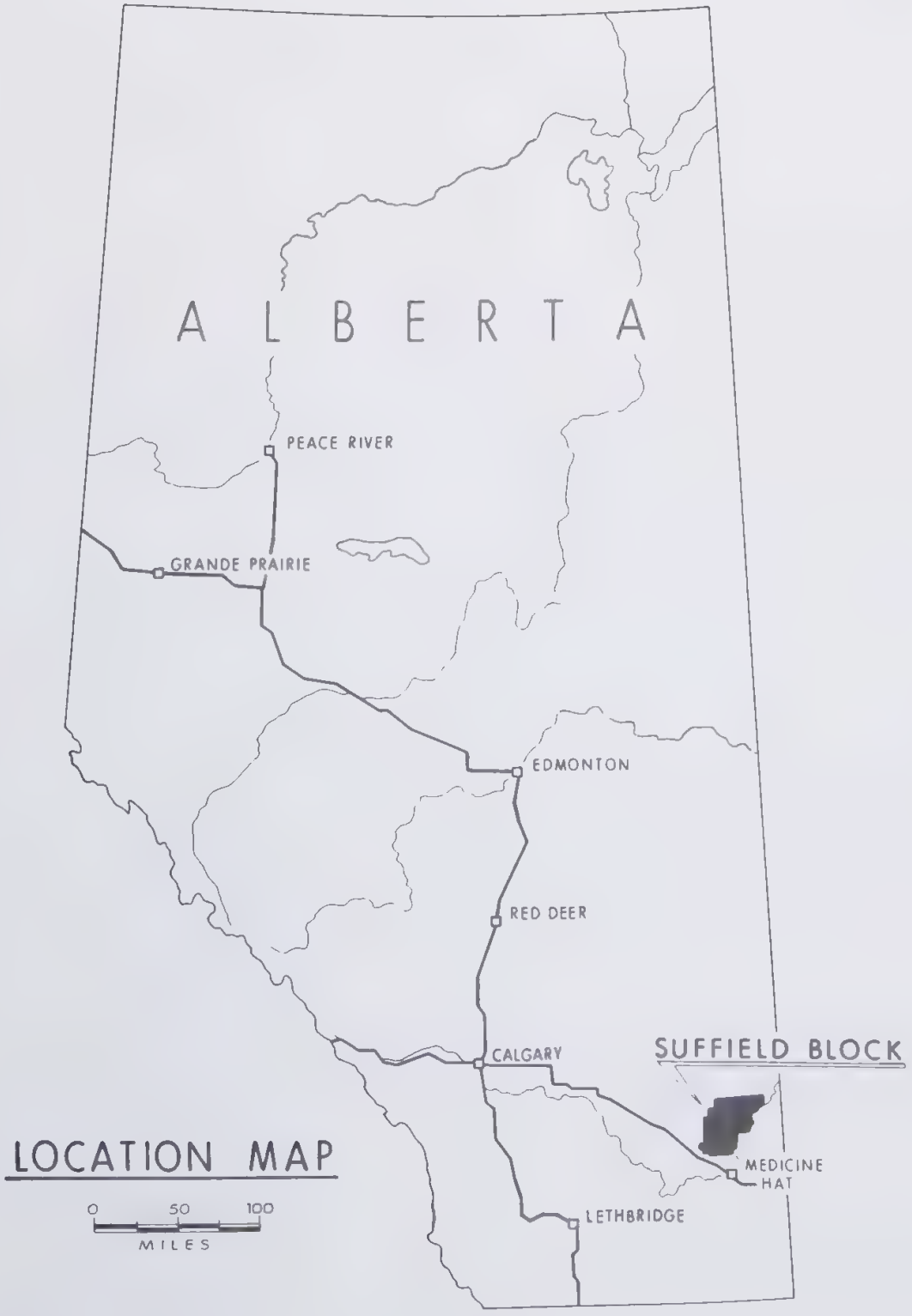
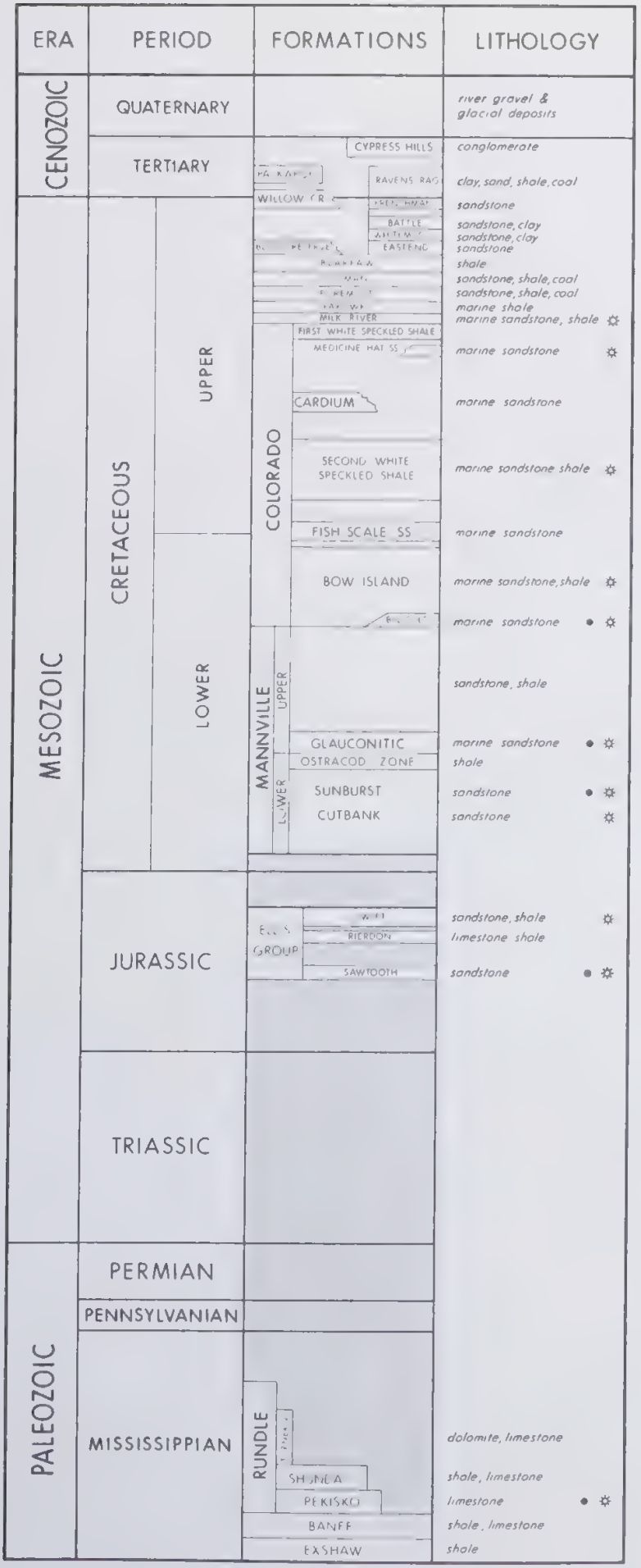

ALBERTA
PEACE RIVER
GRANDE PRAIRIE
EDMONTON
RED DEER
CALGARY
SUFFIELD BLOCK
MEDICINE HAT
LETHBRIDGE
LOCATION MAP
0 50 100
MILES

FIGURE 1

TABLE OF FORMATIONS

SOUTHERN ALBERTA



Potential hydrocarbon reservoirs of SUFFIELD EVALUATION PROGRAM

☼ Gas

● Oil

NOTE FORMATIONS SHOWN COVER ONLY THE INTERVAL QUATERNARY TO TOP OF PALEOZOIC

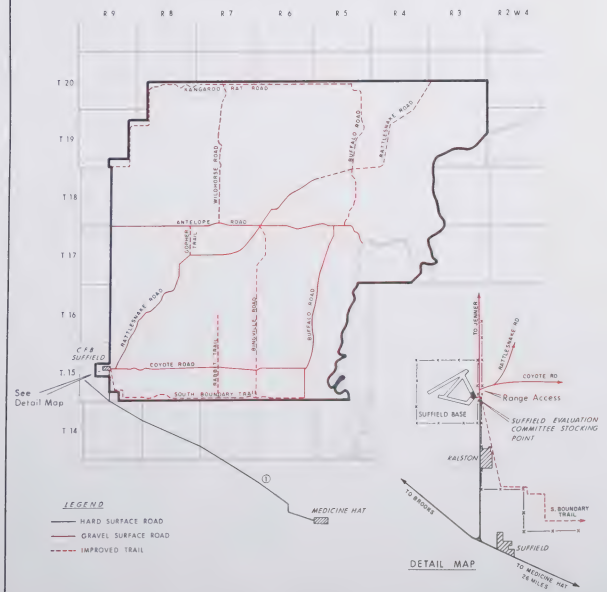
SUFFIELD EVALUATION COMMITTEE

after ENERGY RESOURCES CONSERVATION BOARD

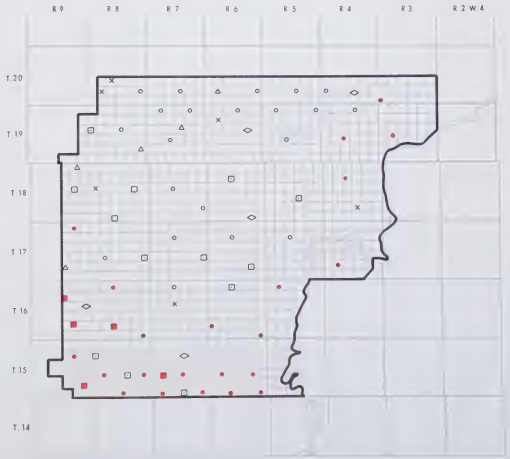
FIGURE 2

SUFFIELD EVALUATION COMMITTEE

BLOCK ACCESS

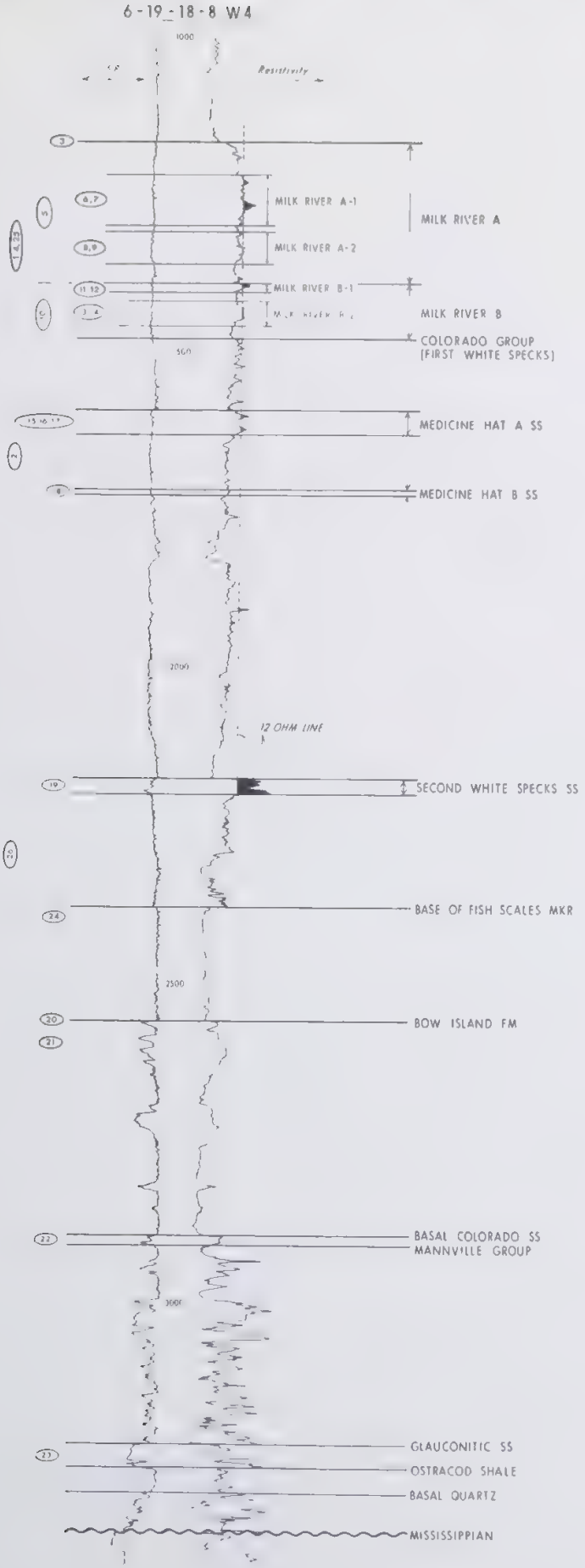


EVALUATION WELL LOCATIONS



TOTAL DEPTH	STAGE 1	STAGE 2	WELLS
MEDICINE HAT	●	○	43
SECOND WHITE SPECKS	■	□	18
BOW ISLAND		◇	5
BASAL COLORADO		△	5
MISSISSIPPIAN		×	6
			77

FIGURE 3

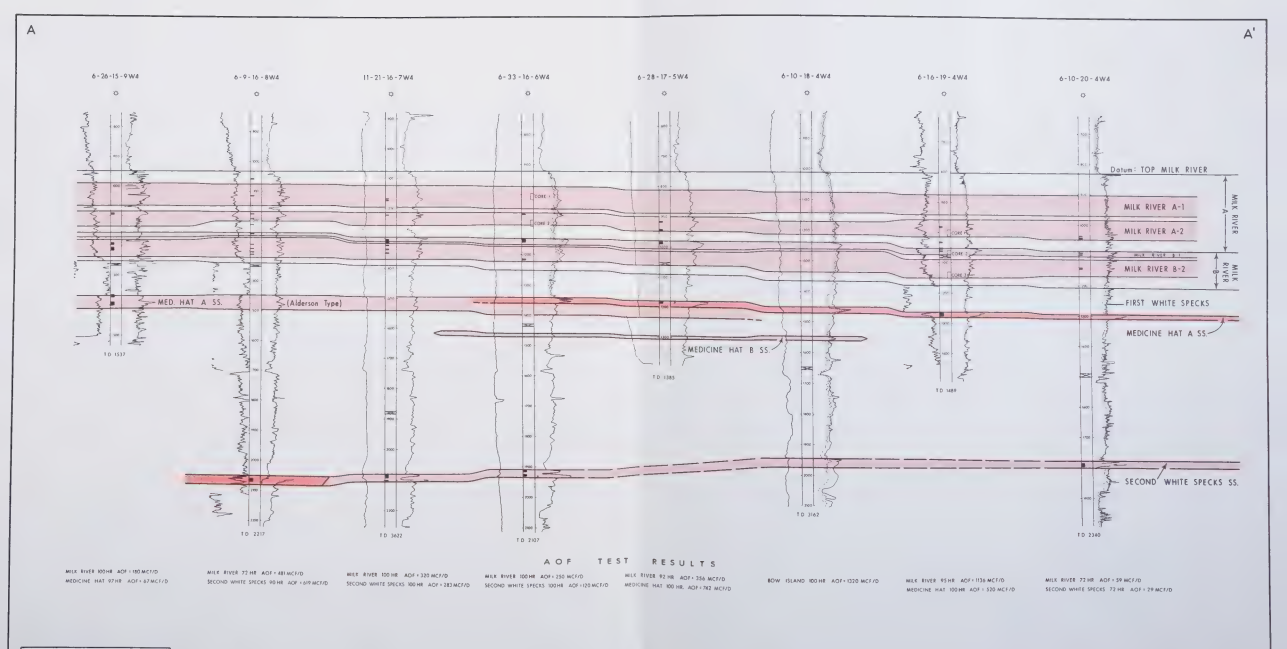


SUFFIELD EVALUATION COMMITTEE

TYPICAL STRATIGRAPHIC SECTION

(8) MAP NUMBER

FIGURE 4



A O F T E S T R E S U L T S

MILK RIVER 100 HR AOF = 180 MCF/D
MEDICINE HAT 97 HR AOF = 67 MCF/D

MILK RIVER 72 HR AOF = 481 MCF/D
SECOND WHITE SPECKS 90 HR AOF = 69 MCF/D

MILK RIVER 100 HR AOF = 320 MCF/D
SECOND WHITE SPECKS 100 HR AOF = 283 MCF/D

MILK RIVER 100 HR AOF = 250 MCF/D
SECOND WHITE SPECKS 100 HR AOF = 125 MCF/D

MILK RIVER 92 HR AOF = 356 MCF/D
MEDICINE HAT 100 HR AOF = 762 MCF/D

BOW ISLAND 100 HR AOF = 1220 MCF/D

MILK RIVER 95 HR AOF = 1136 MCF/D
MEDICINE HAT 100 HR AOF = 520 MCF/D

MILK RIVER 72 HR AOF = 59 MCF/D
SECOND WHITE SPECKS 72 HR AOF = 29 MCF/D

SUFFIELD EVALUATION COMMITTEE

STRATIGRAPHIC CROSS SECTION
A-A'
MILK RIVER TO SECOND WHITE SPECKS

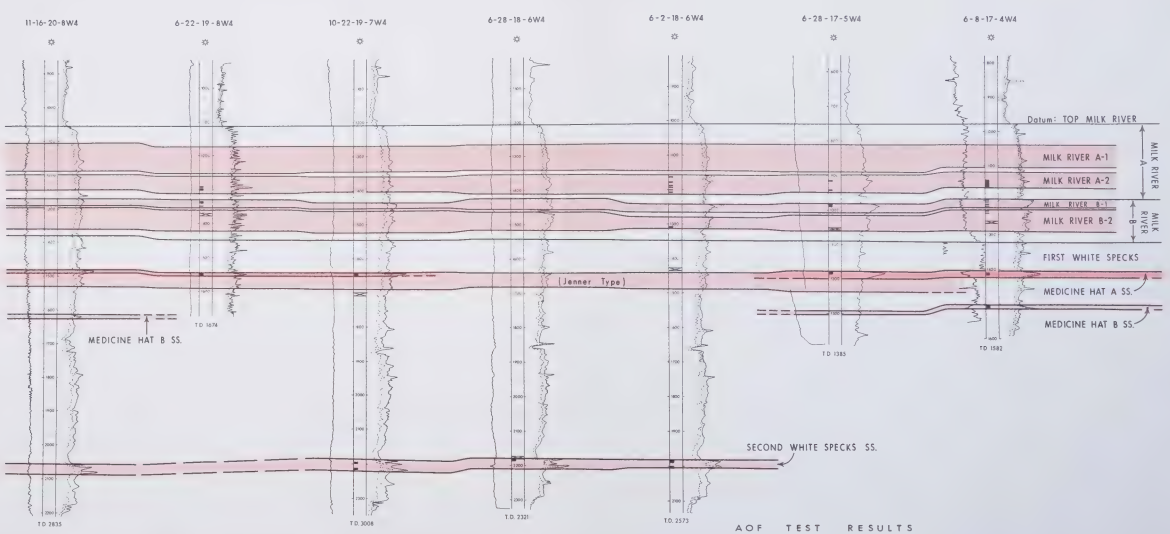
LAST ALCOMPER LTD.
Geology by J. M. Feldman
August, 1976

FIGURE 5

SCALE
200
FEET
100
0
Feet to metre

LEGEND
PERFORATIONS
CORED INTERVAL
PACKER

TESSEN MAPPING LTD.



SUFFIELD EVALUATION COMMITTEE

STRATIGRAPHIC CROSS SECTION
B - B'
MILK RIVER TO SECOND WHITE SPECKS

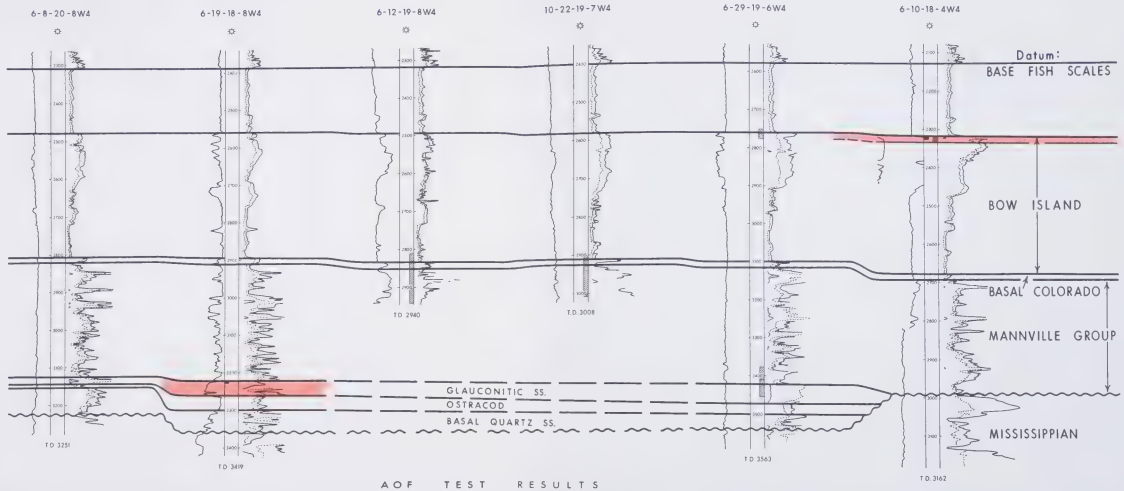
LAST, KLOEPFER LTD.
Geology by J.H. Tidsbury — August 1976

FIGURE 6

THIESSEN MAPPING LTD

C

C'



AOF TEST RESULTS

MEDICINE HAT 94.5 HR AOF = 665 MCF/D
SECOND WHITE SPECKS 100 HR AOF = 58 MCF/D

GLAUCONITE 39.25 HR AOF = 60,000 MCF/D

MEDICINE HAT 100HR AOF = 93 MCF/D
SECOND WHITE SPECKS 361 HR. AOF = 183 MCF/D

DST 2810' - 2941'
REC. 80' DRILLING FLUID, 850' MCW

MEDICINE HAT 100 HR. AOF = 555 MCF/D
SECOND WHITE SPECKS 100 HR. AOF = 57 MCF/D

DST 2900' - 3010'
REC 60' DRILLING FLUID

MILK RIVER 188 HR AOF = 198 MCF/D
MEDICINE HAT 205 HR AOF = 425 MCF/D

DST 2755' - 2775'
REC 900' DRILLING FLUID, WAB AFTER 25 MIN.

DST 3376' - 3409'
REC 3340' FRESH WTR., WTS 20 MIN.

DST 3410' - 3456'
REC 3380' FRESH WTR., WTS 30 MIN

BOW ISLAND 100 HR AOF = 1320 MCF/D

DST 2315' - 2334'
REC. 20' DRILLING FLUID

SUFFIELD EVALUATION COMMITTEE

STRATIGRAPHIC CROSS SECTION
C-C'
BASE FISH SCALES TO MISSISSIPPIAN

EAST, KLOPPER LTD
Geology by J.N. Tidsbury
August, 1976

SCALE
FEET
200
100
0
Not to scale

LEGEND
PERFORATIONS
DST

FIGURE 7

TESSEN MAPPING LTD

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

LOGGING TOOL SPACING
RESISTIVITY MEASUREMENTS
(APPROXIMATE)

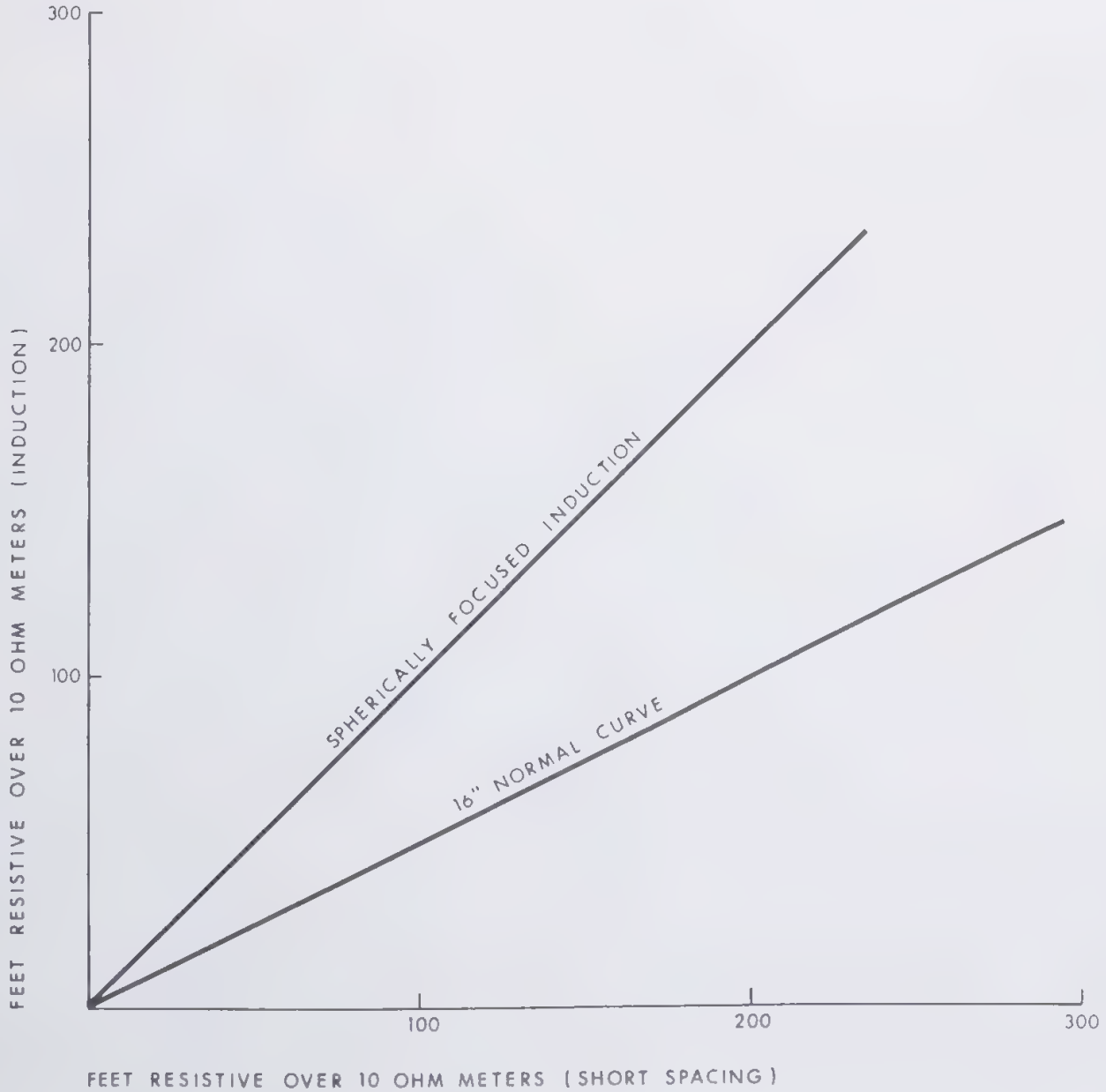


FIGURE 8

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION
INDUCTION CURVE
RESISTIVITY RELATIONSHIP WITH
NET PAY
(APPROXIMATE)

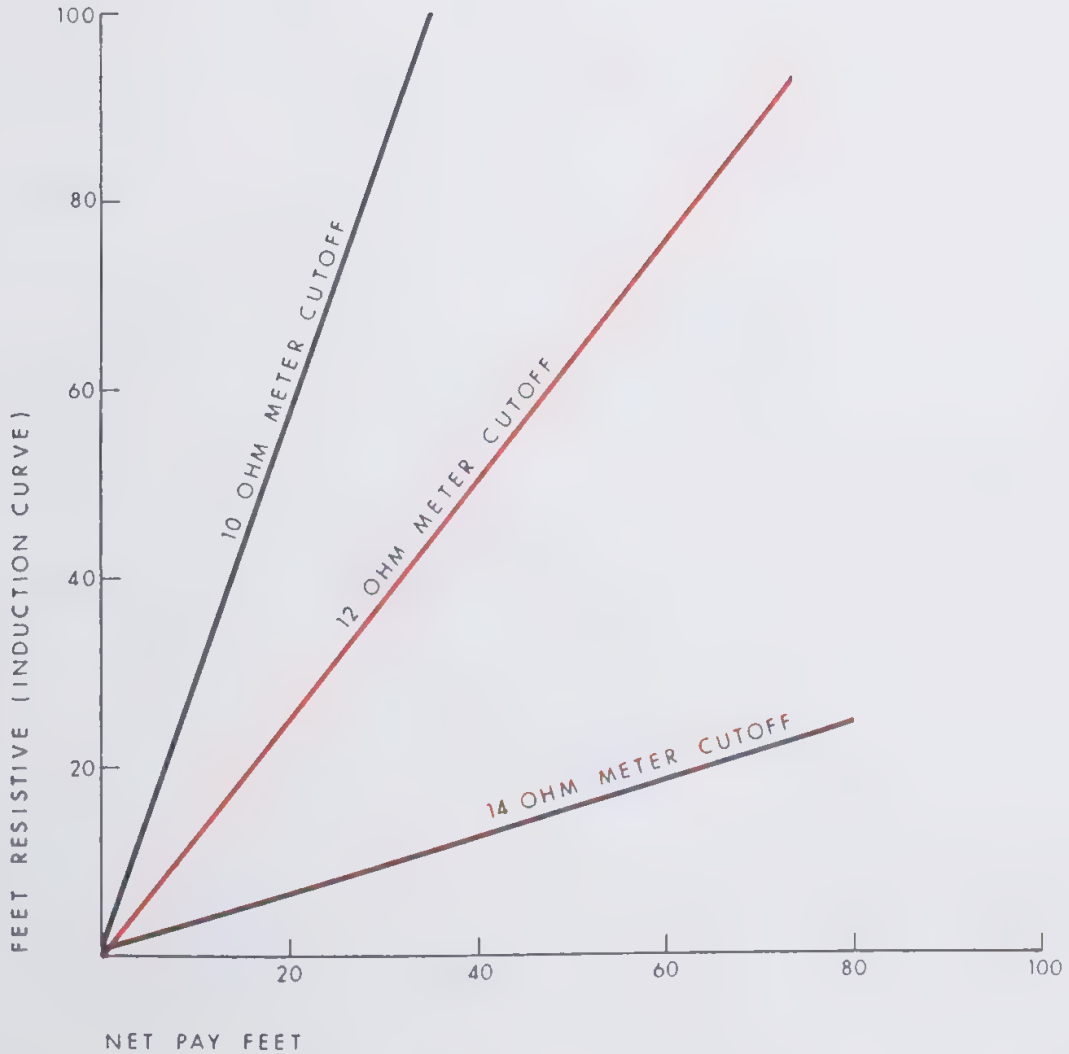


FIGURE 9

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

INDUCTION CURVE
RESISTIVITY RELATIONSHIPS
(APPROXIMATE)

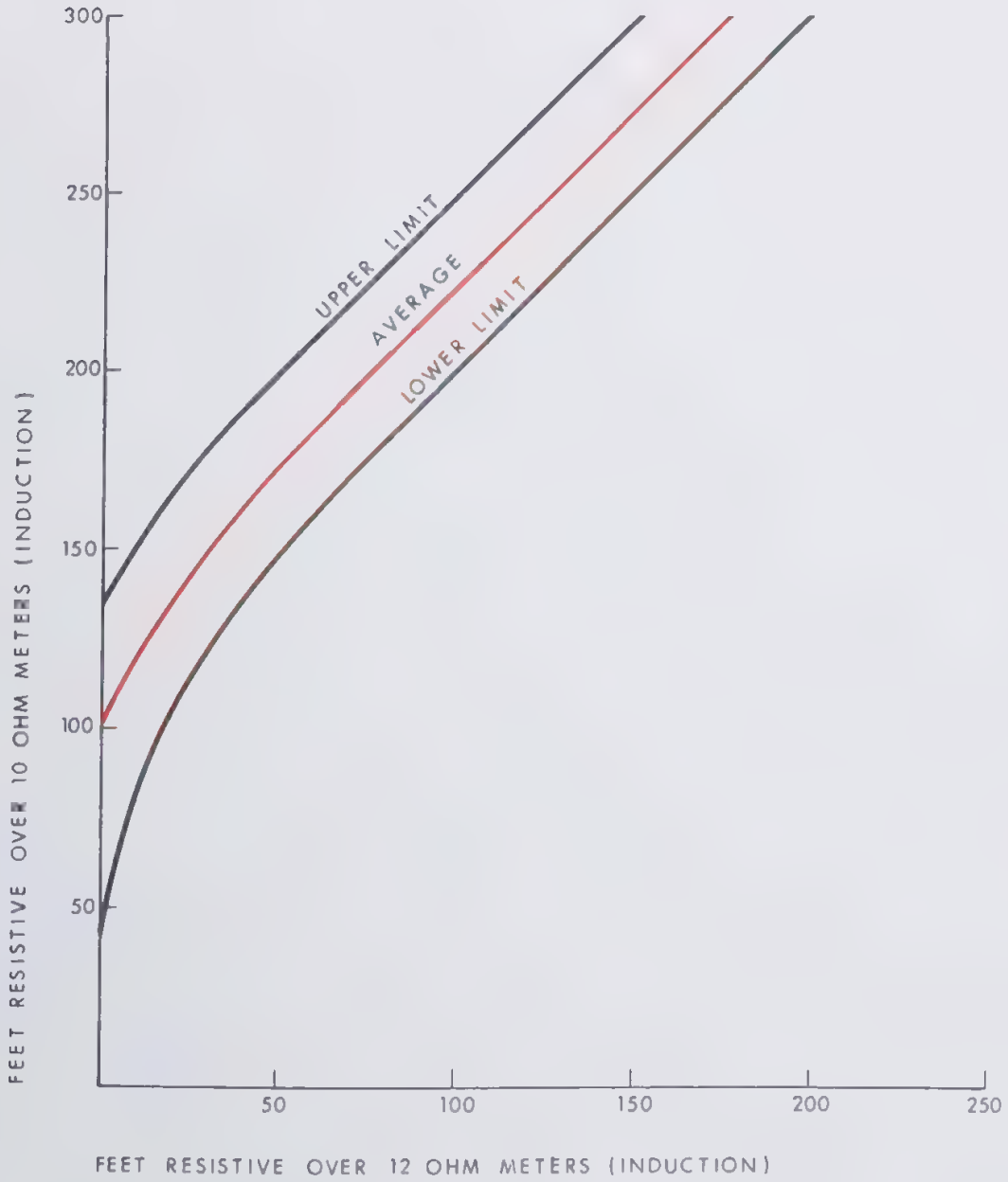


FIGURE 10

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

APPROXIMATE RELATIONSHIP
RESISTIVITY - NET PAY

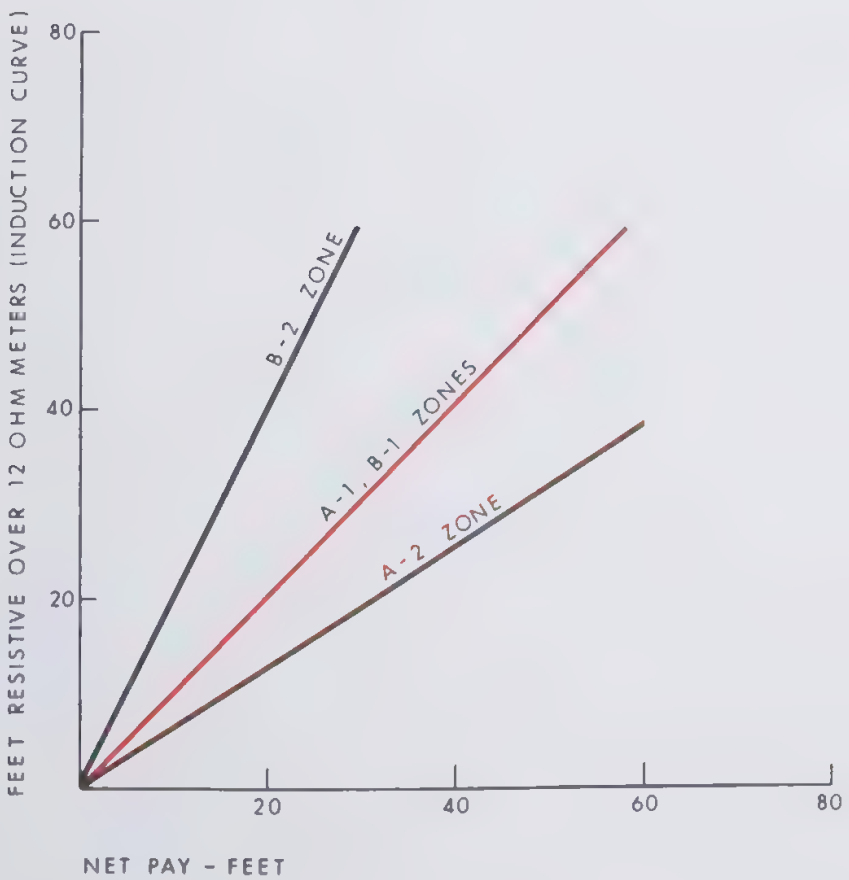


FIGURE 11

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

CORE POROSITY AND
LOG CALCULATED POROSITY

(BASED ON THE FOLLOWING CORED WELLS)

7-14-15-6	6-17-17-8
6-5-15-7	6-15-18-5
6-17-15-7	6-12-18-7
6-33-16-6	6-16-19-4
6-33-16-8	6-16-19-7
11-11-16-9	6-8-20-6

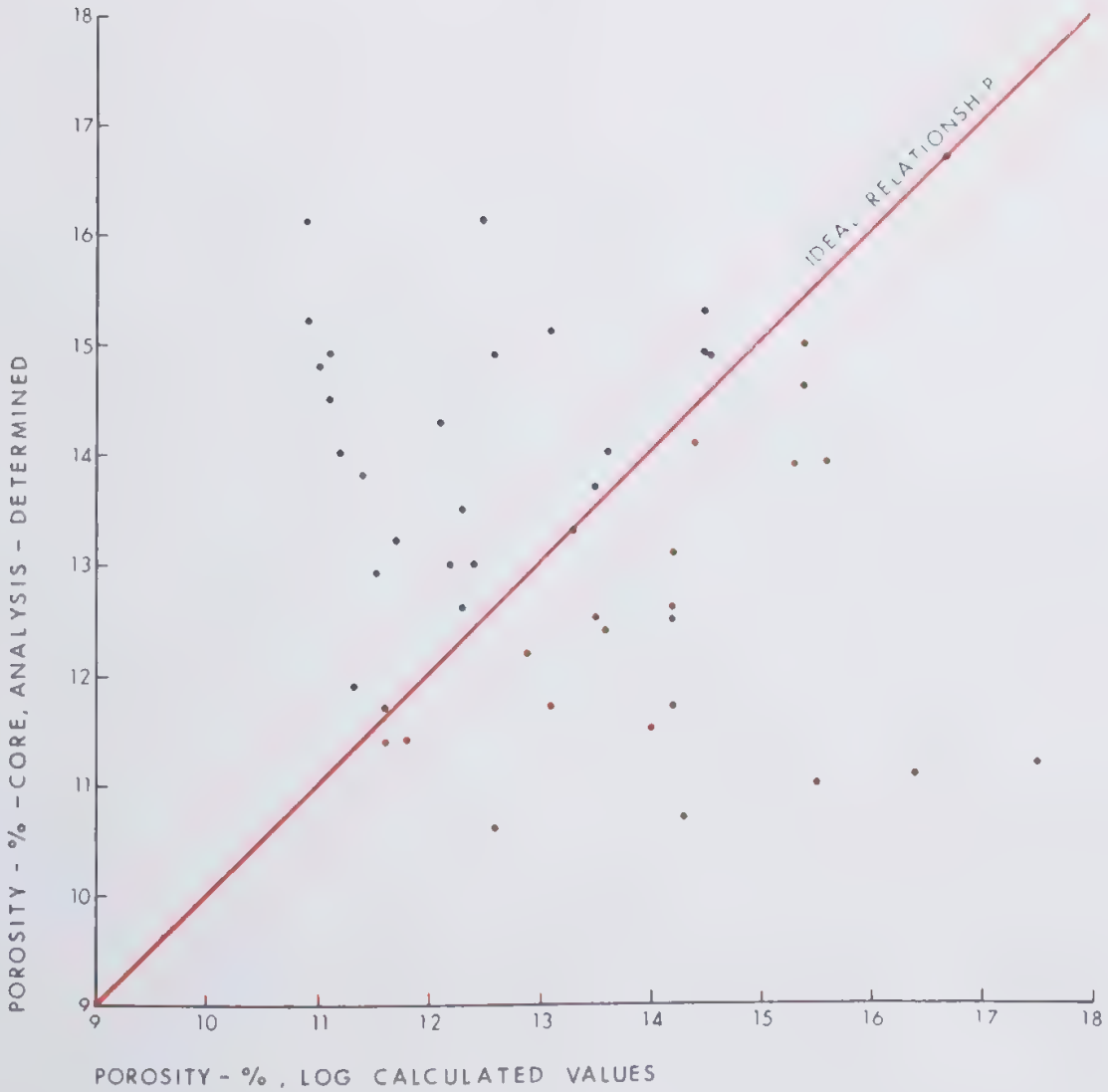


FIGURE 12

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER, MEDICINE HAT, SECOND WHITE SPECKS FORMATIONS

GAS COMPRESSIBILITY vs PRESSURE

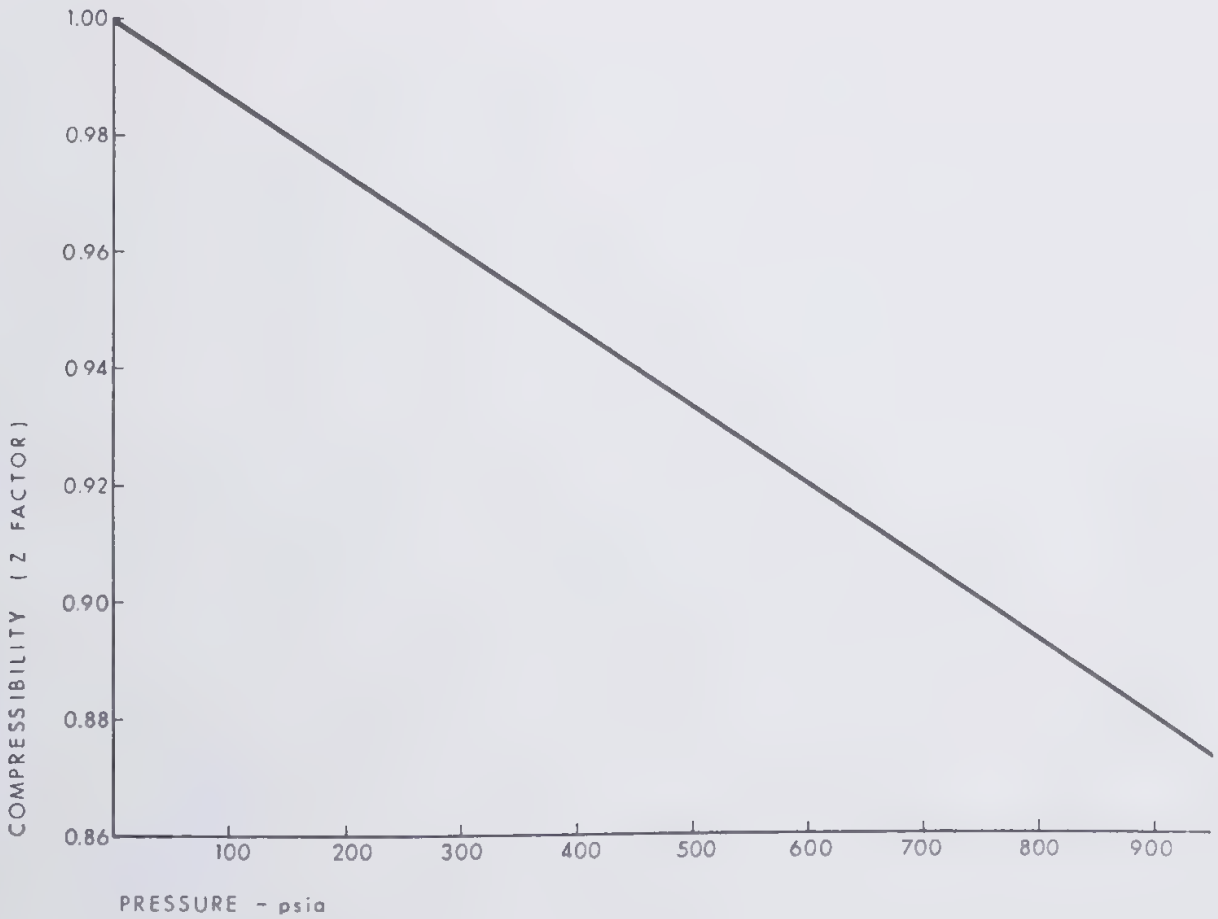


FIGURE 13

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

AOF (100 HOUR) – NET PAY
(APPROXIMATE)

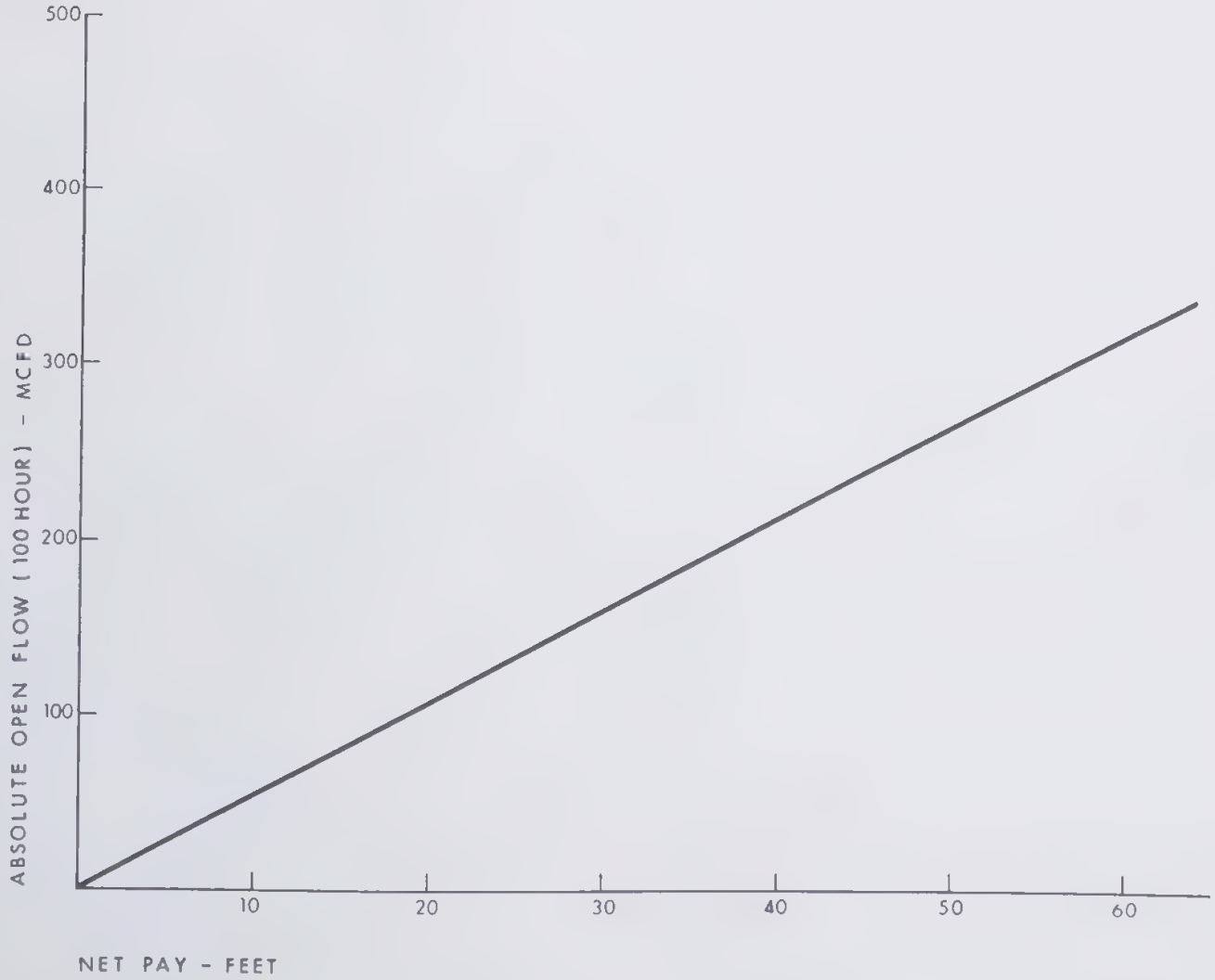


FIGURE 14

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

ISOCHRONAL AOF AND EXTENDED FLOW AOF

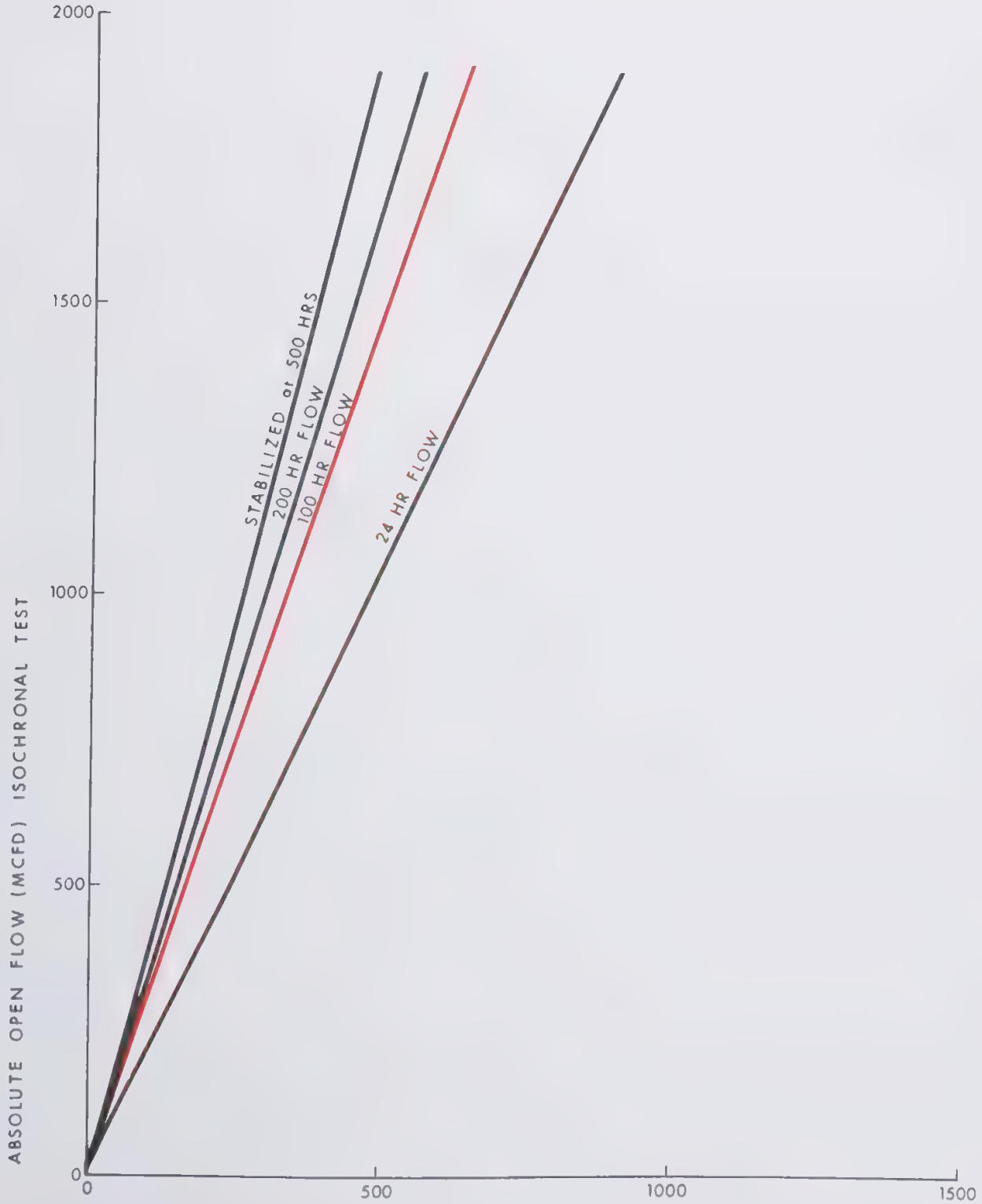


FIGURE 15

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

STABILIZED AOF – HOURS EXTENDED FLOW

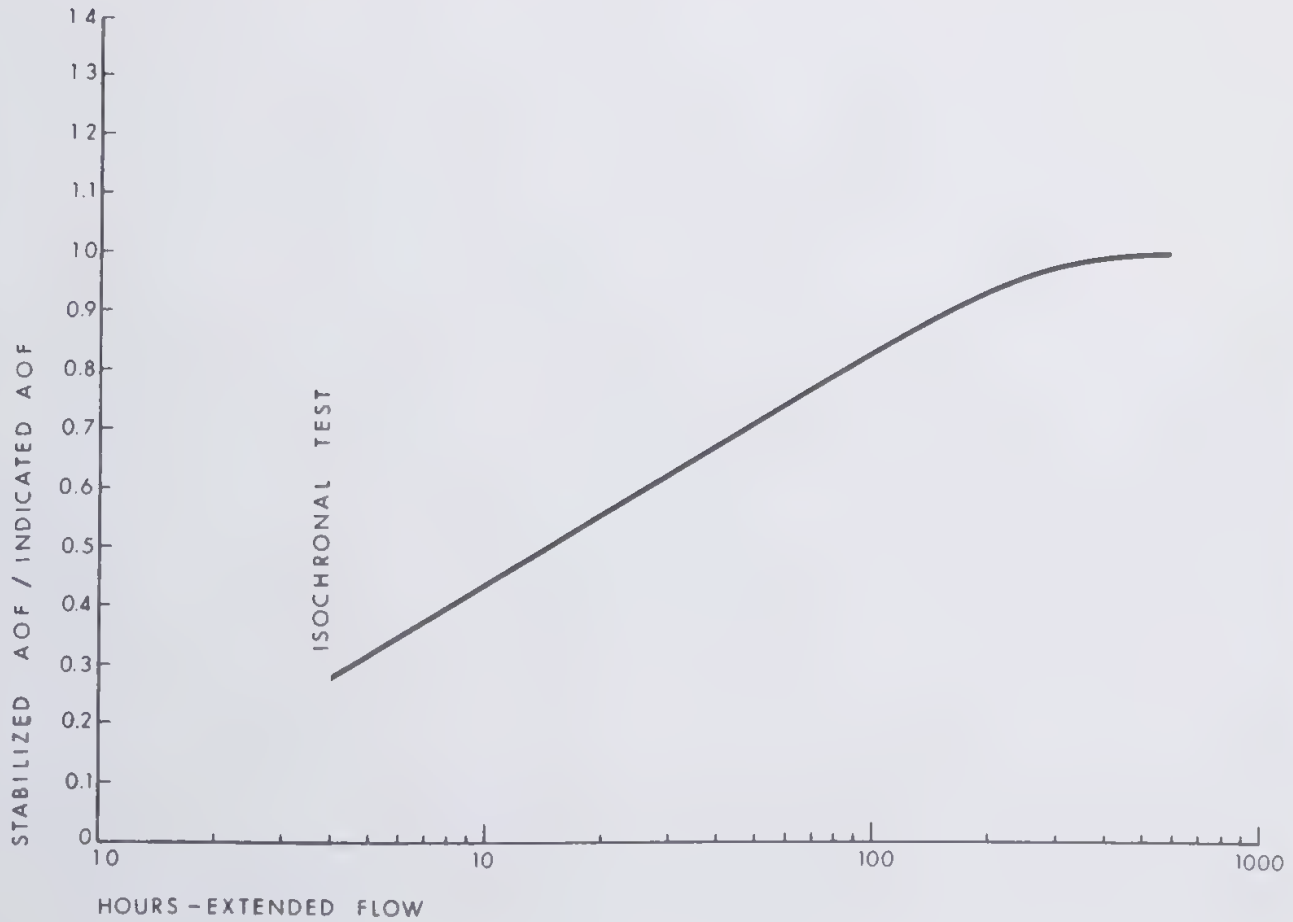


FIGURE 16

SUFFIELD EVALUATION DRILLING PROGRAM

MEDICINE HAT FORMATION

ATLEE/BUFFALO MEDICINE HAT POOL

NET PAY – RESISTIVITY RELATIONSHIP
(Net pay based on log analysis)

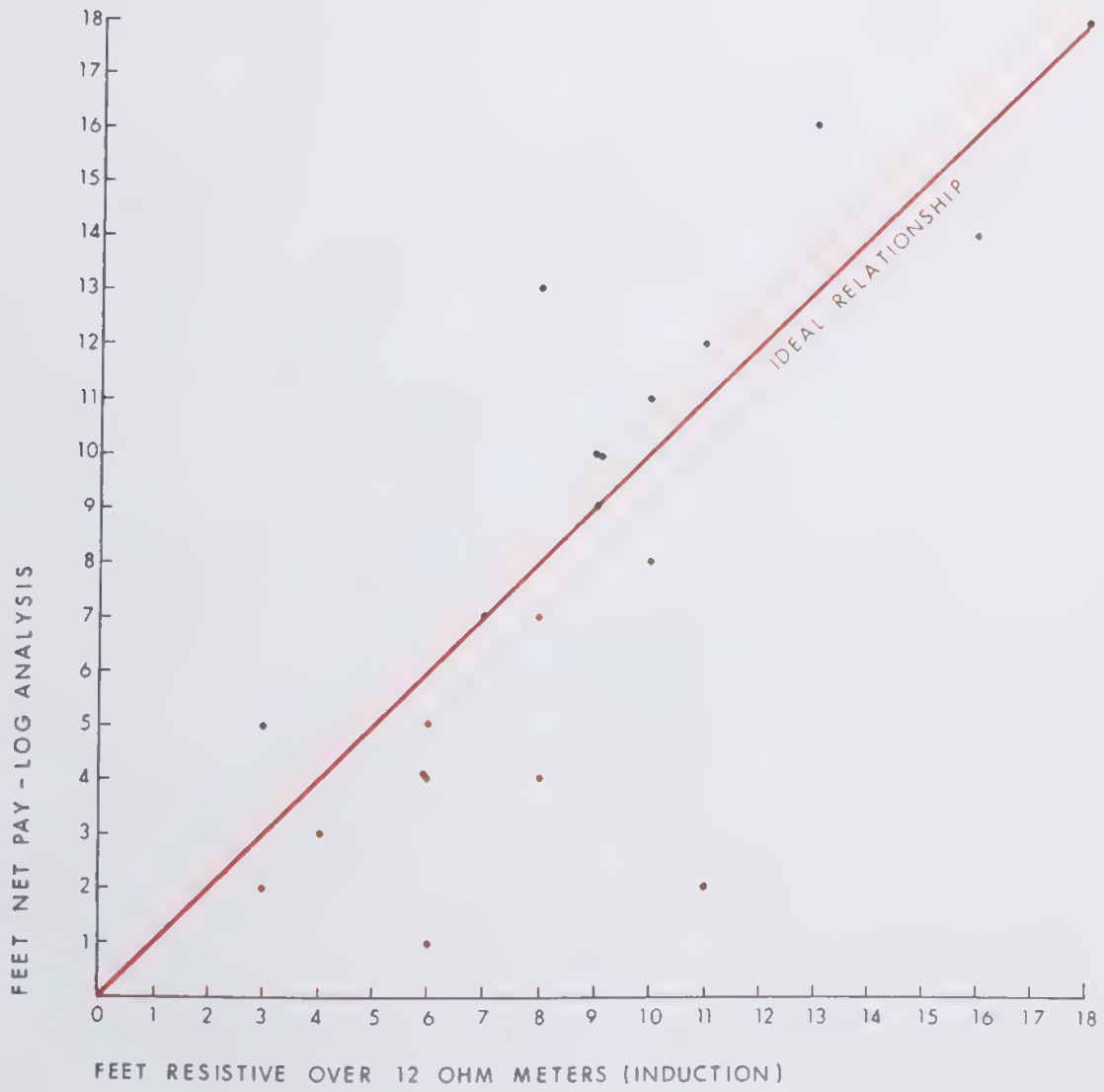

IDEAL RELATIONSHIP
FEET NET PAY - LOG ANALYSIS
FEET RESISTIVE OVER 12 OHM METERS (INDUCTION)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIGURE 17

SUFFIELD EVALUATION DRILLING PROGRAM

MEDICINE HAT FORMATION

AOF (100 HR) - NET PAY
(APPROXIMATE)

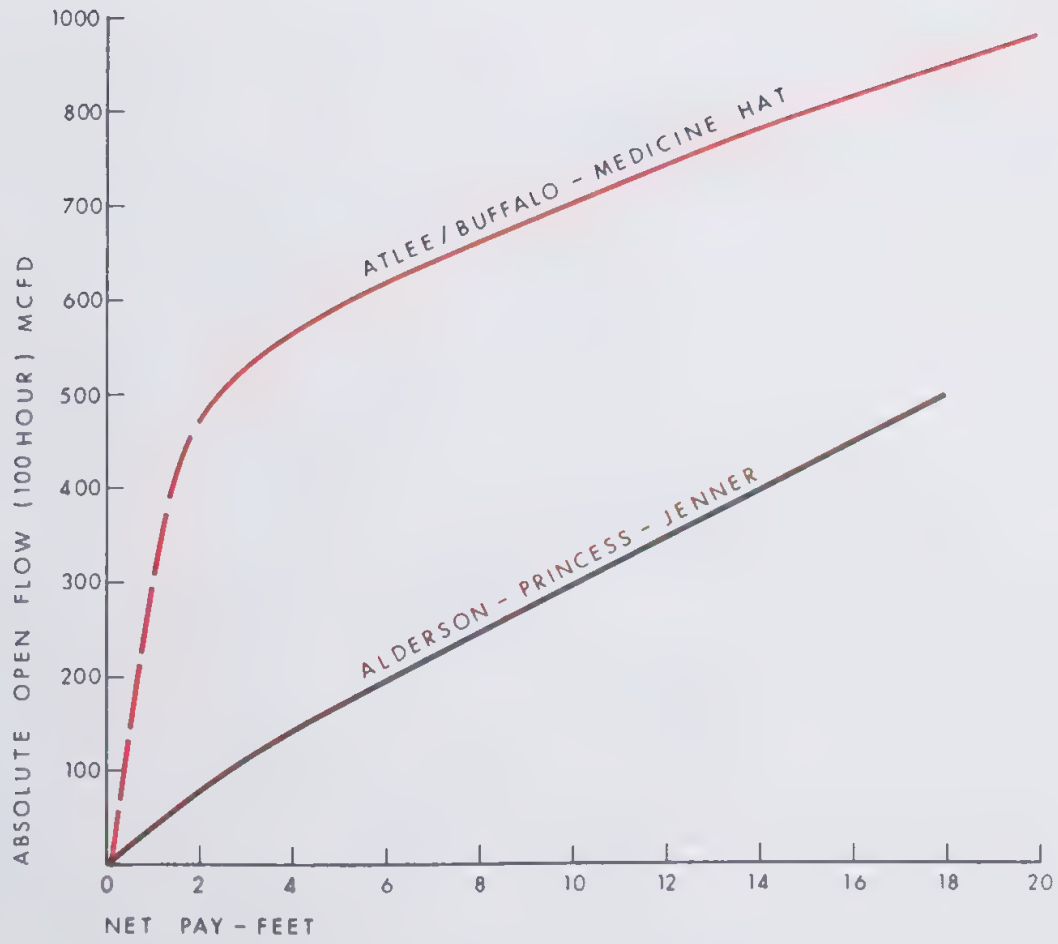


FIGURE 18

SUFFIELD EVALUATION DRILLING PROGRAM

SECOND WHITE SPECKS FORMATION

AOF (100 HR) - NET PAY
(APPROXIMATE)

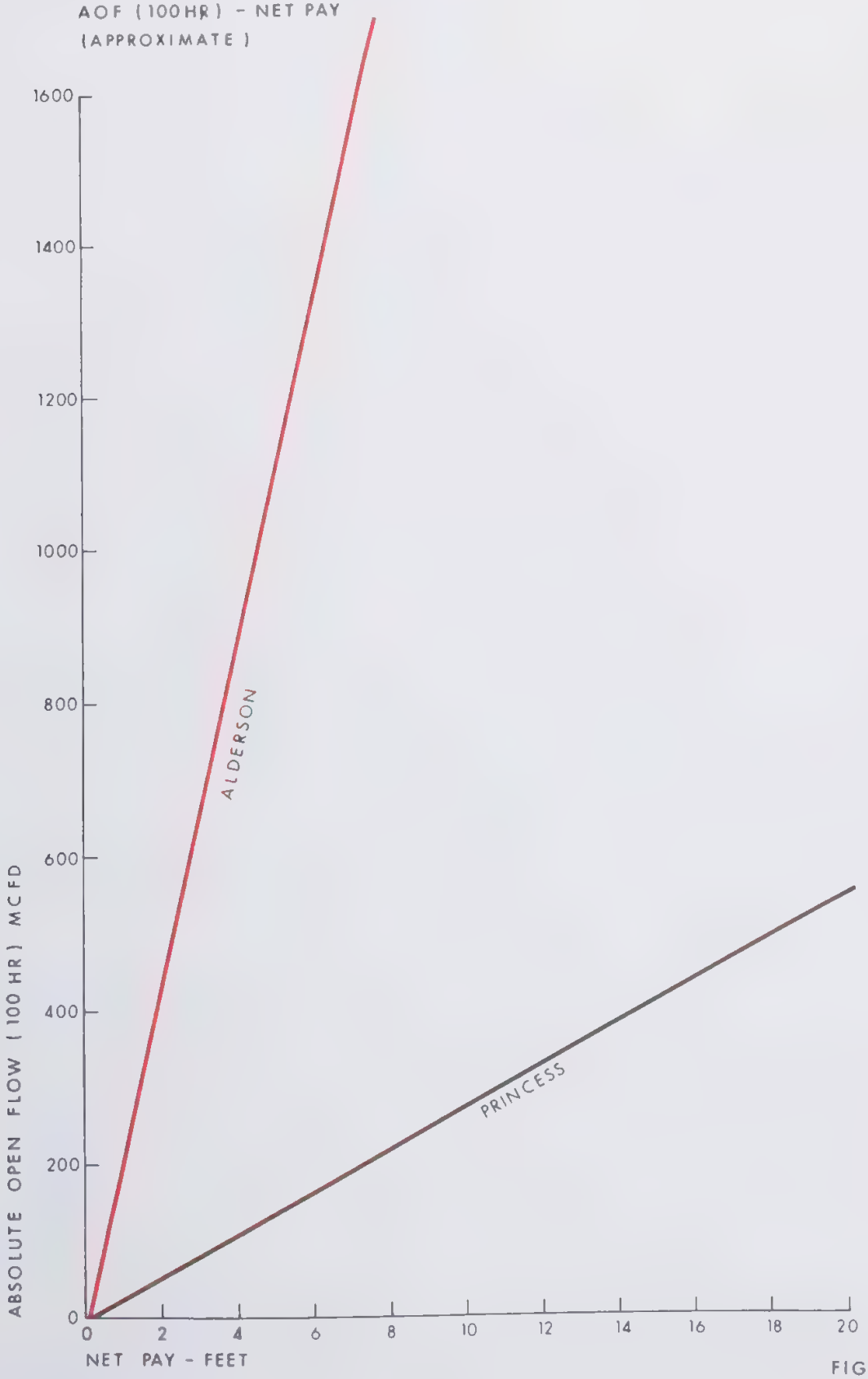


FIGURE 19

SUFFIELD EVALUATION DRILLING PROGRAM

MEDICINE HAT FORMATION
SECOND WHITE SPECKS FORMATION

ISOCHRONAL AOF AND EXTENDED FLOW AOF

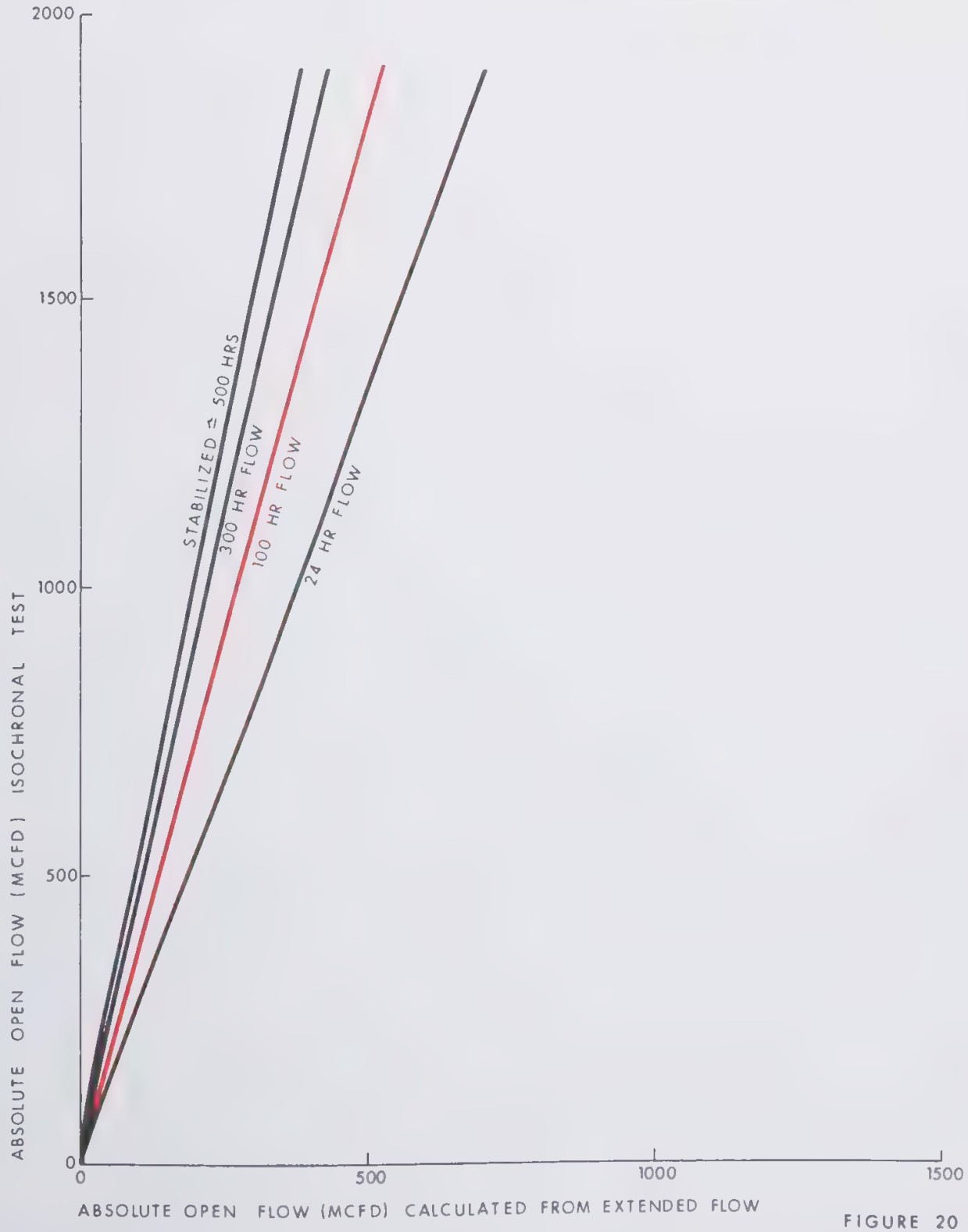


FIGURE 20

SUFFIELD EVALUATION DRILLING PROGRAM

MEDICINE HAT FORMATION
SECOND WHITE SPECKS FORMATION

STABILIZED AOF - EXTENDED FLOW

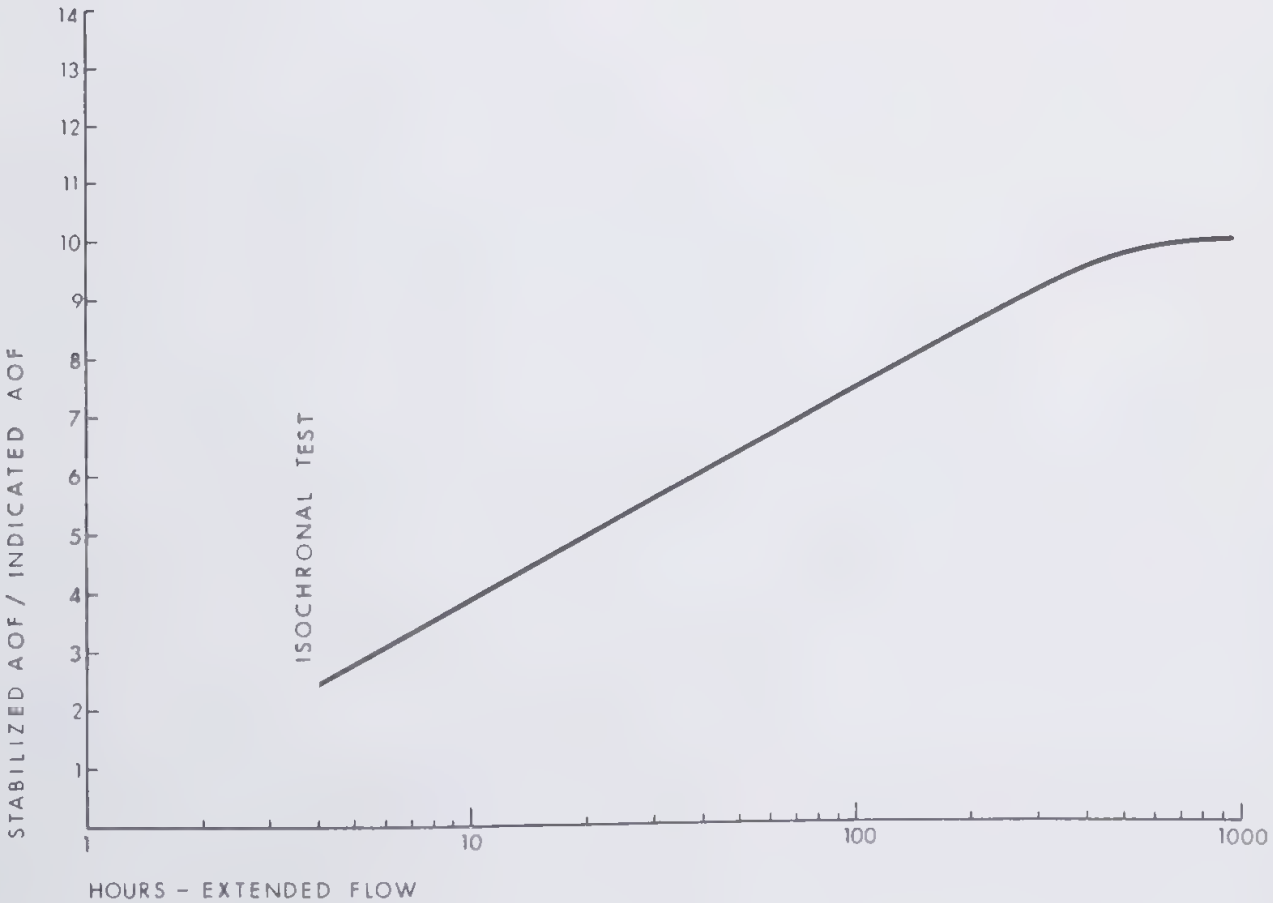


FIGURE 21

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION
MEDICINE HAT FORMATION
SECOND WHITE SPECKS FORMATION
STABILIZED AOF – RAW GAS RECOVERY EFFICIENCY

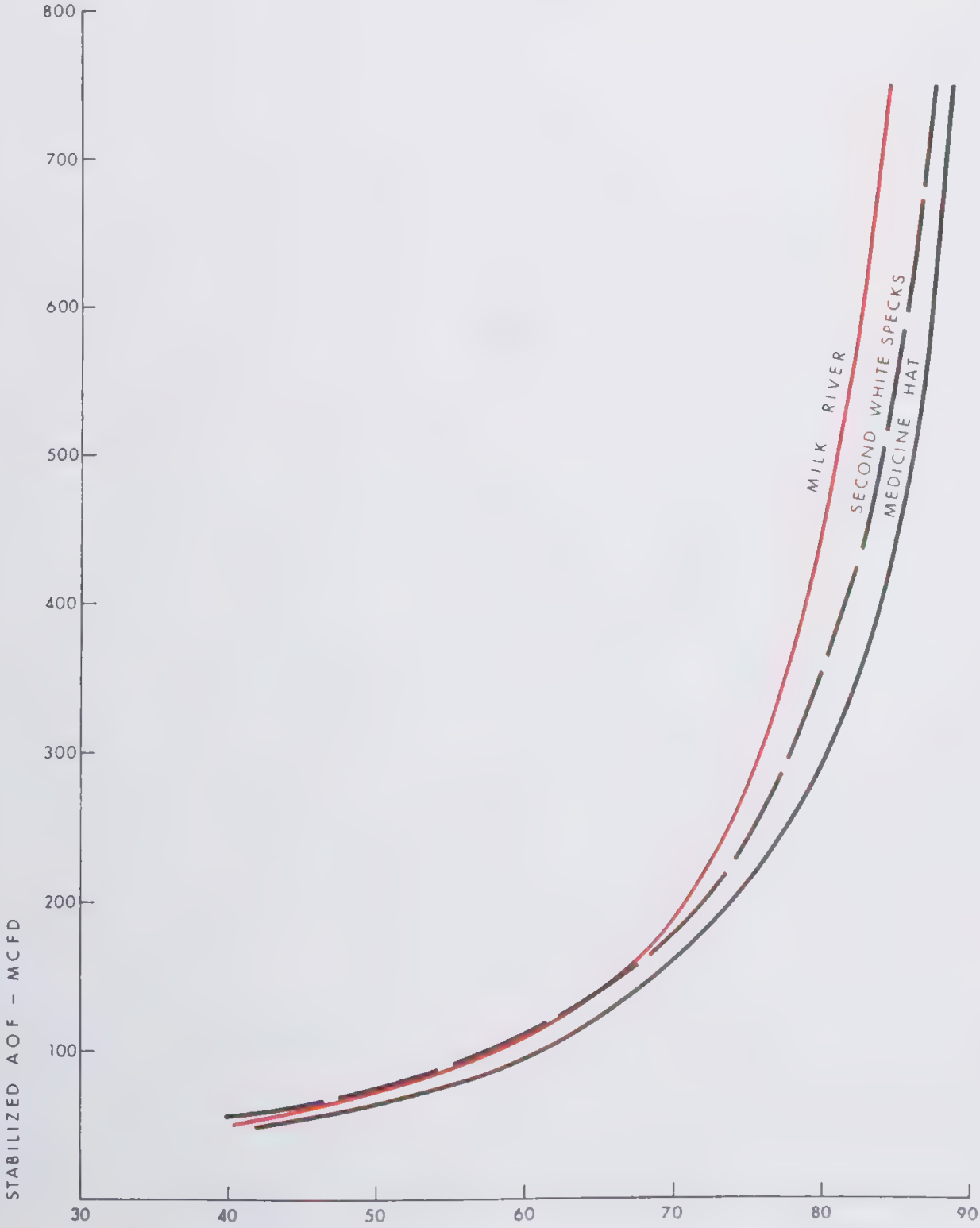


FIGURE 22

SUFFIELD EVALUATION DRILLING PROGRAM

MILK RIVER FORMATION

APPARENT PRODUCTIVITY IMPROVEMENT DUE TO FRACTURING

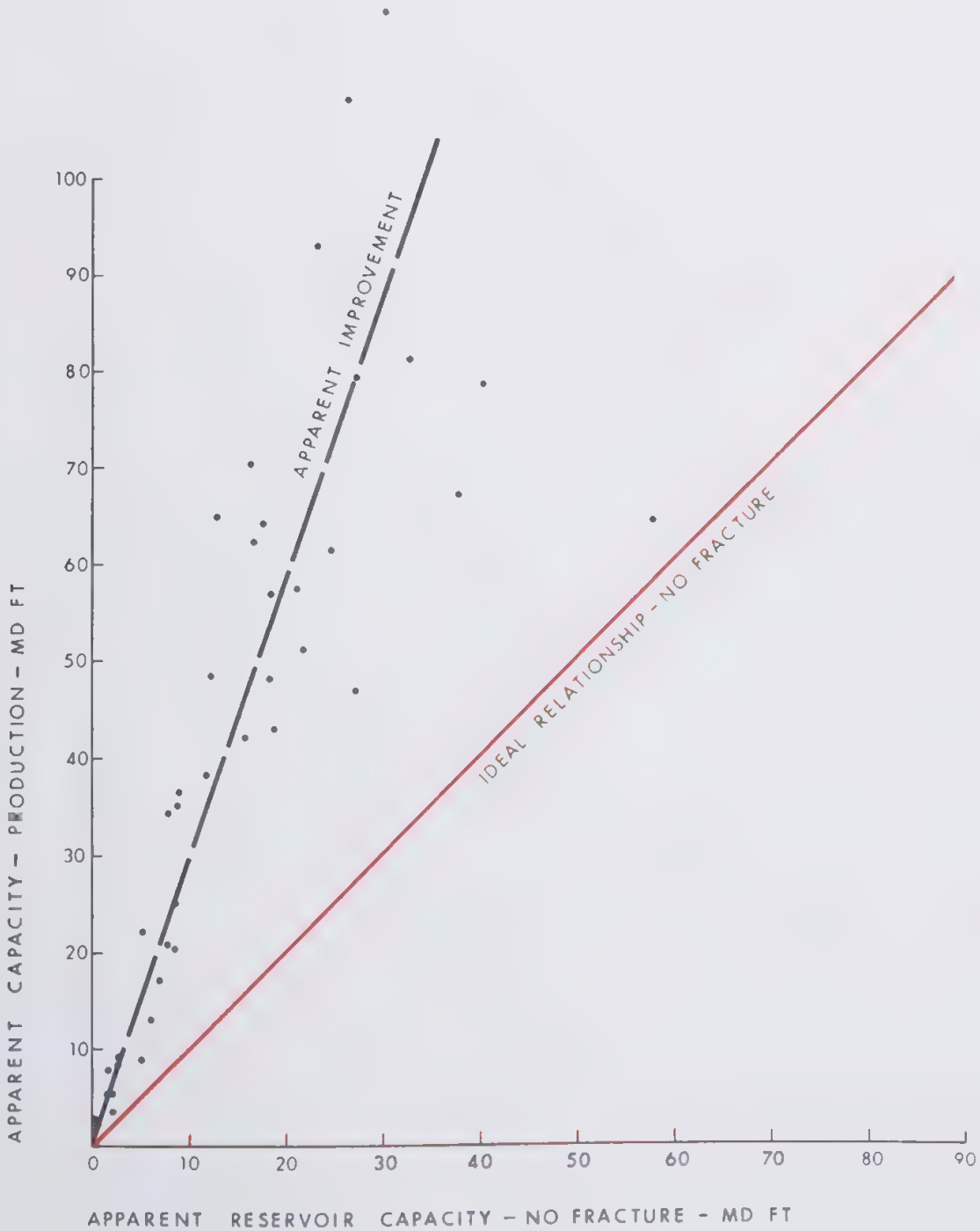


FIGURE 23

SUFFIELD EVALUATION DRILLING PROGRAM

MEDICINE HAT FORMATION

APPARENT PRODUCTIVITY IMPROVEMENT DUE TO FRACTURING

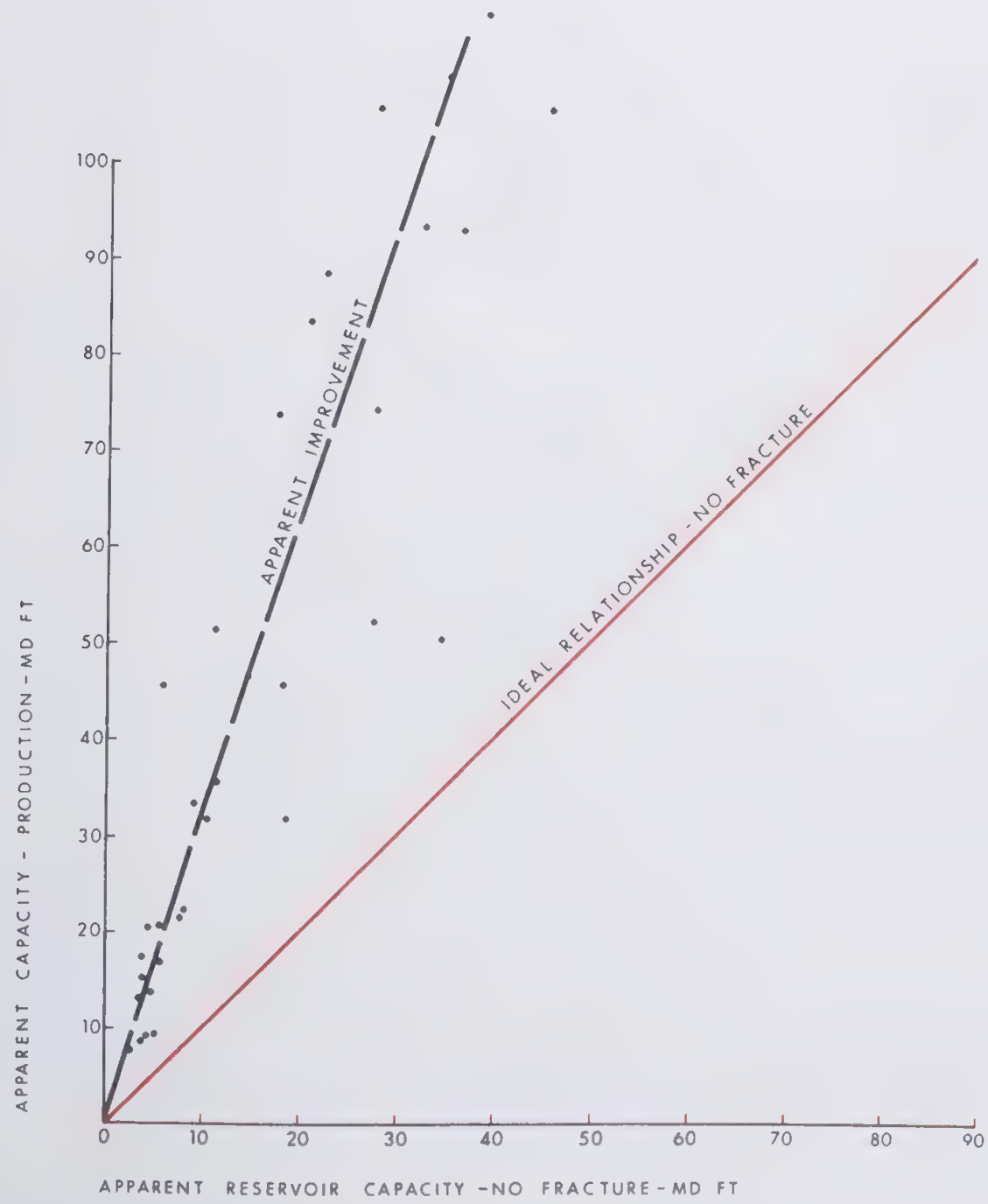


FIGURE 24

SUFFIELD EVALUATION DRILLING PROGRAM

SECOND WHITE SPECKS FORMATION

APPARENT PRODUCTIVITY IMPROVEMENT DUE TO FRACTURING

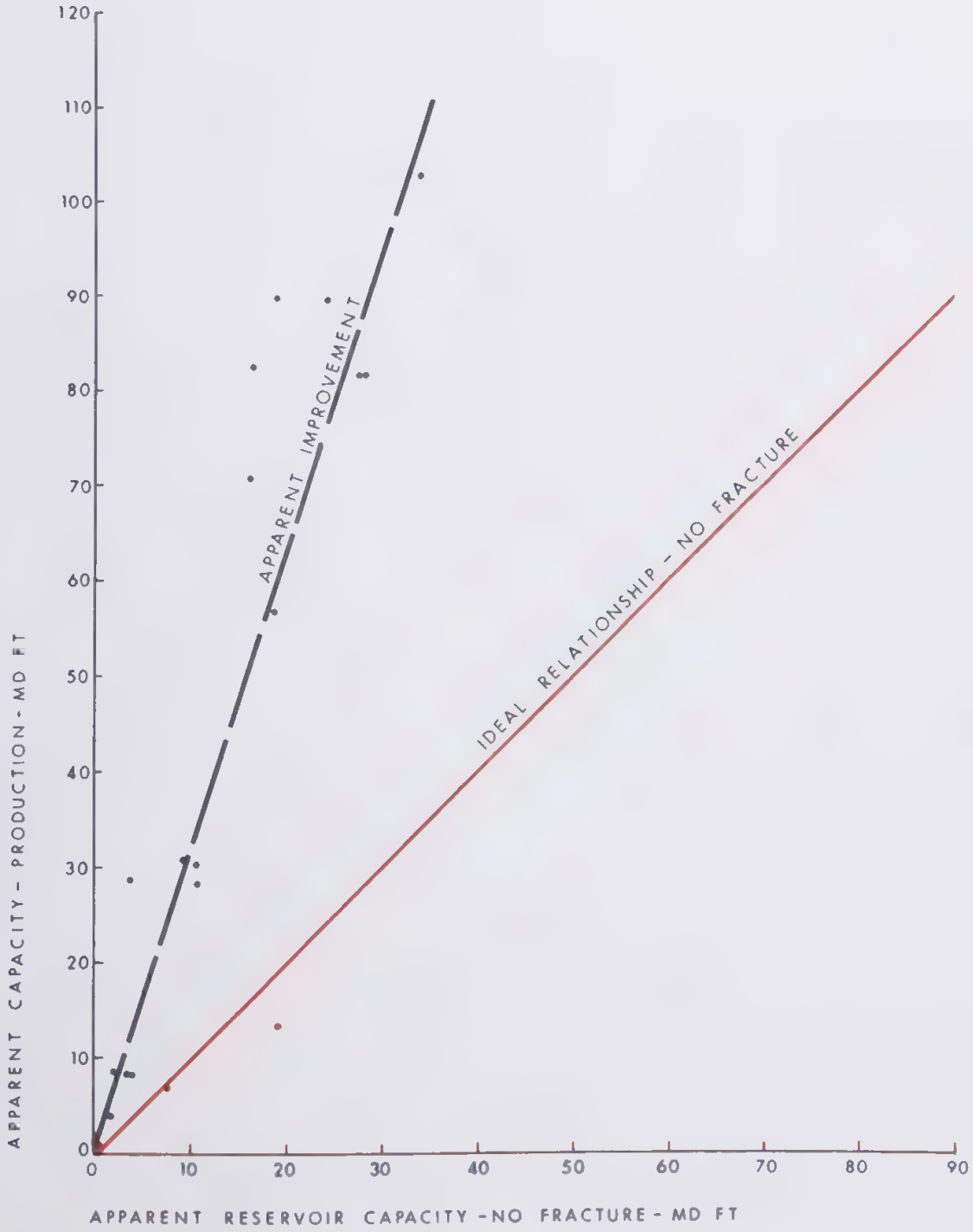
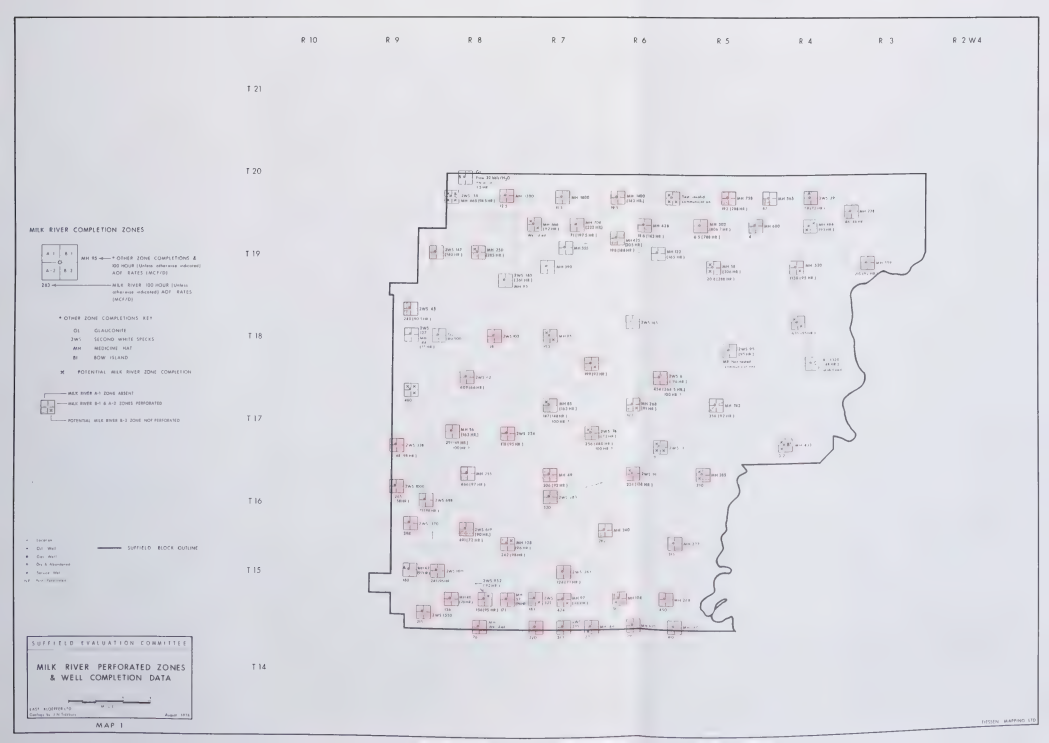
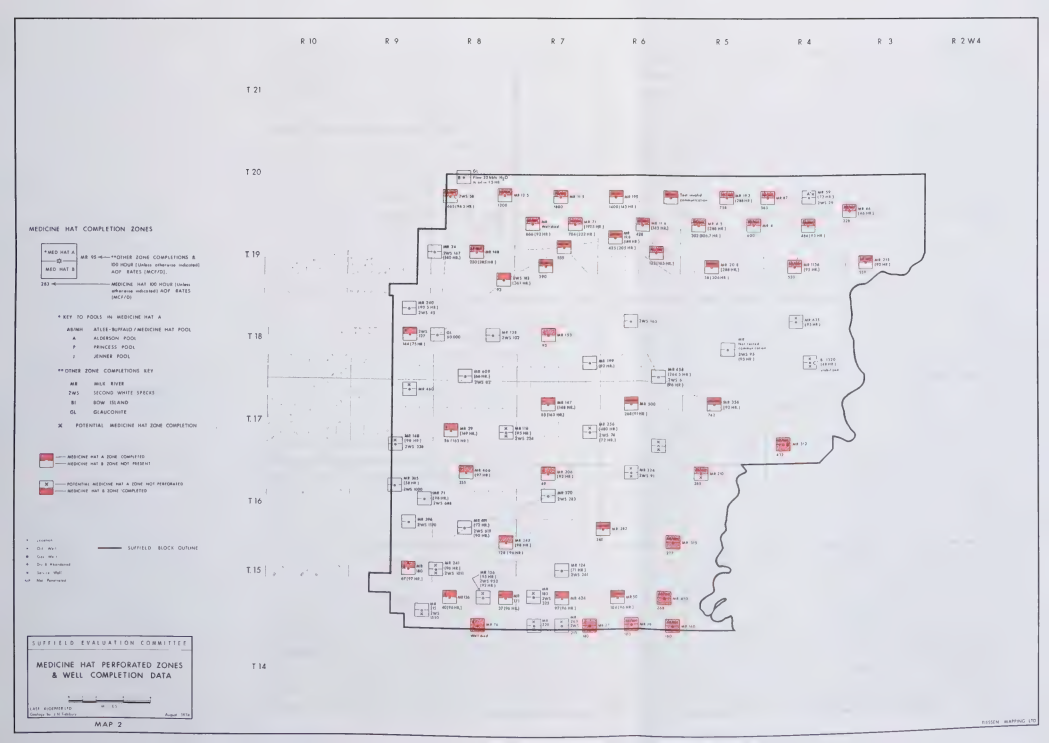


FIGURE 25


R 10
R 9
R 8
R 7
R 6
R 5
R 4
R 3
R 2 W 4
T 21
T 20
T 19
T 18
T 17
T 16
T 15
T 14
MILK RIVER COMPLETION ZONES
A-1
B-1
C
A-2
B-2
MH 95 — * OTHER ZONE COMPLETIONS & 100 HOUR (Unless otherwise indicated) AOF RATES (MCF/D)
283 — MILK RIVER 100 HOUR (Unless otherwise indicated) AOF RATES (MCF/D)
* OTHER ZONE COMPLETIONS KEY
GL GLAUCONITE
2ws SECOND WHITE SPECKS
MH MEDICINE HAT
BI BOW ISLAND
POTENTIAL MILK RIVER ZONE COMPLETION
MILK RIVER A-1 ZONE ABSENT
MILK RIVER B-1 & A-2 ZONES PERFORATED
POTENTIAL MILK RIVER B-2 ZONE NOT PERFORATED
SUFFIELD BLOCK OUTLINE
SUFFIELD EVALUATION COMMITTEE
MILK RIVER PERFORATED ZONES & WELL COMPLETION DATA
EAST ALBERTA
Drawing No. 1-74-Tentative
August 1974
MAP 1


R 10
R 9
R 8
R 7
R 6
R 5
R 4
R 3
R 2W 4
T 21
T 20
T 19
T 18
T. 17
T 16
T. 15
T 14
MEDICINE HAT COMPLETION ZONES
* MED HAT A
MED HAT B
MB 95 ← **OTHER ZONE COMPLETIONS & 100 HOUR (Unless otherwise indicated) AOF RATES (MCF/D).
283 ← MEDICINE HAT 100 HOUR (Unless otherwise indicated) AOF RATES (MCF/D)
* KEY TO POOLS IN MEDICINE HAT A
ABMH ATLEE-BUFFALO / MEDICINE HAT POOL
A ALDERSON POOL
P PRINCESS POOL
J JENNER POOL
** OTHER ZONE COMPLETIONS KEY
MB MILE RIVER
2WS SECOND WHITE SPECKS
BI BOW ISLAND
GL GLAUCONITE
X POTENTIAL MEDICINE HAT ZONE COMPLETION
MEDICINE HAT A ZONE COMPLETED
MEDICINE HAT B ZONE NOT PRESENT
POTENTIAL MEDICINE HAT A ZONE NOT PERFORATED
MEDICINE HAT B ZONE COMPLETED
SUFFIELD BLOCK OUTLINE
SUFFIELD EVALUATION COMMITTEE
MEDICINE HAT PERFORATED ZONES & WELL COMPLETION DATA
MAP 2
August 1976
PETRUM MAPPING LTD

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

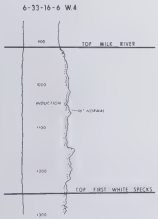
T 16

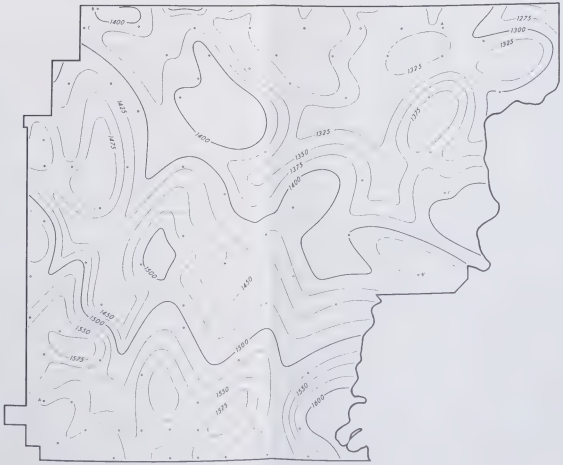
T 15

T 14

NOTE

All evaluation wells were drilled through Milk River Formation





R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

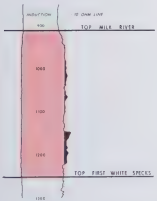
T 15

T 14

NOTE

All evaluation wells were drilled through Milk River Formation.

6-33-16-6 W4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER RESISTIVITY ISOPACH

(HIGHER THAN 10 OHMS - INDUCTION CURVE)

CONTOUR INTERVAL 50'

MAP 4

REVIEW MAPPING LTD.

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

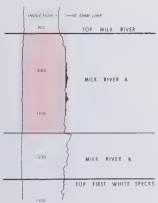
T 15

T 14

NOTE

All evaluation wells were drilled through Milk River Formation

6-33-16-6 W4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER A ZONE
RESISTIVITY ISOPACH
(HIGHER THAN 10 OHMS - INDUCTION CURVE)
CONTOUR INTERVAL 20

MILES

MAP 5

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2W4

T 21

T 20

T 19

T 18

T 17

T 16

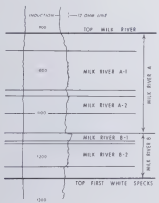
T 15

T 14

NOTE

All evaluation wells were drilled through Milk River Formation

6-33-16-6 W4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER A-1 ZONE
RESISTIVITY ISOPACH
(HIGHER THAN 12 OHMS- INDUCTION CURVE)
CONTOUR INTERVAL - 10

MAP 6

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W4

T 21

T 20

T 19

T 18

T 17

T 16

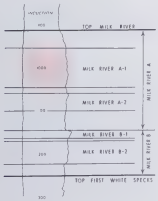
T 15

T 14

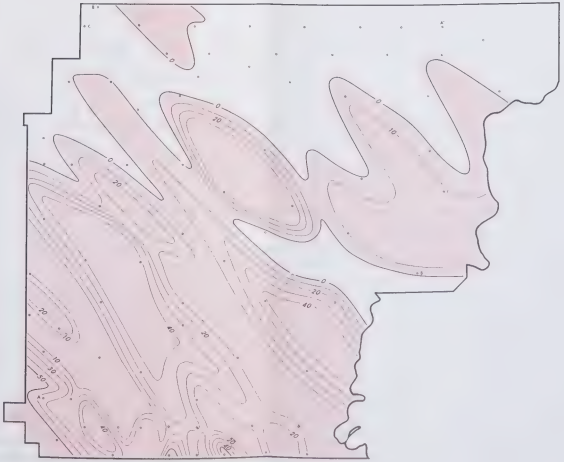
NOTES

1. Pay derived from a combination of logs
2. All evaluation wells were drilled through Milk River Formation

6-33-16-6 W4



SUFFIELD BLOCK OUTLINE



SUFFIELD EVALUATION COMMITTEE

MILK RIVER A-1 ZONE

NET PAY ISOPACH

CONTOUR INTERVAL 10'

MAP 7

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

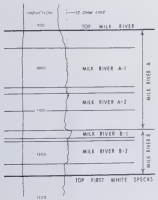
T 15

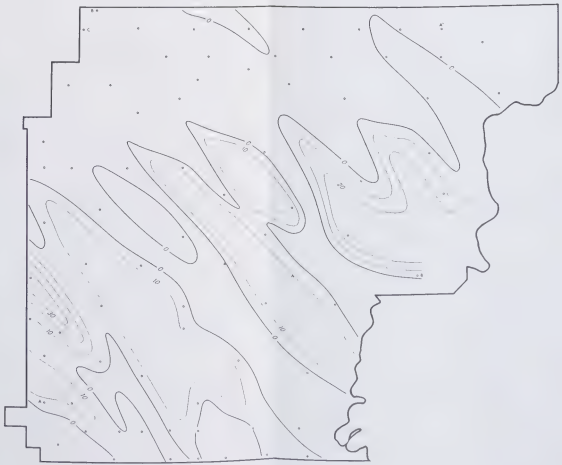
T 14

NOTE

All evaluation wells were drilled through Milk River Formation

6-33-16-6 W.4





SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER A-2 ZONE
RESISTIVITY ISOPACH
(HIGHER THAN 12 OHMS - INDUCTION CURVE)

CONTOUR INTERVAL 10

MILES

MAP 8

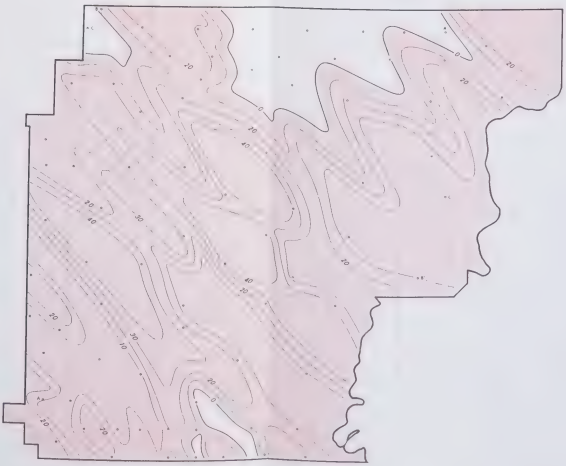
HANSEN MAPPING LTD

NOTES

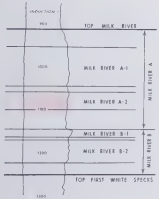
1. Pay derived from a combination of logs
2. All evaluation wells were drilled through Milk River Formation.

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21
T 20
T 19
T 18
T 17
T 16
T 15
T 14



6-33-16-6 W 4



SUFFIELD BLOCK outline

SUFFIELD EVALUATION COMMITTEE

MILK RIVER A-2 ZONE
NET PAY ISOPACH
CONTOUR INTERVAL 10'

MAP 9

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

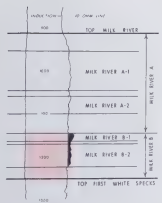
T 15

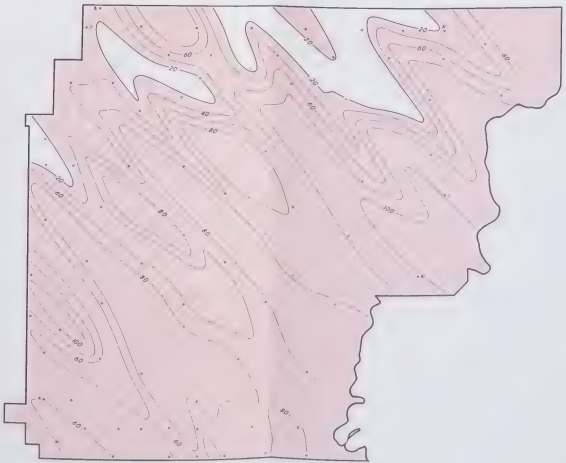
T 14

NOTE

All evaluation wells were drilled through Milk River Formation.

6-33-16-6 W4





SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER B ZONE
RESISTIVITY ISOPACH
(HIGHER THAN 10 OHMS - INDUCTION CURVE)
CONTOUR INTERVAL 20'

MAP 10

HUTTON MAPPING LTD

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

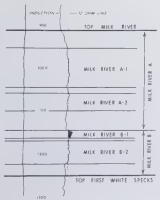
T 15

T 14

NOTE

All evaluation wells were drilled through Milk River Formation

6-33-16-6 W.4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER B-1 ZONE
RESISTIVITY ISOPACH
(HIGHER THAN 12 OHMS- INDUCTION CURVE)

CONTOUR INTERVAL 10

MAP 11

REGIONAL MAPPING 611

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

T 15

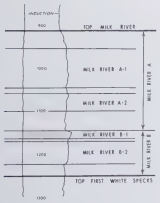
T 14

NOTES

1 Pay derived from a combination of logs.

2 All evaluation wells were drilled through Milk River Formation

6-33-16-6 W4



- Location
- Oil Well
- Gas Well
- Oil & Abandoned
- Service Well
- Well Abandoned

SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER B-1 ZONE

NET PAY ISOPACH

CONTOUR INTERVAL 10'

MAP 12

RITSON MAPPING LTD

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

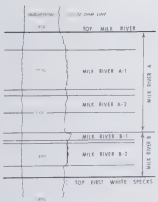
T 15

T 14

NOTE

All evaluation wells were drilled through Milk River Formation.

6-33-16-6 W4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER B-2 ZONE
RESISTIVITY ISOPACH
(HIGHER THAN 12 OHMS - INDUCTION CURVE)
CONTOUR INTERVAL 10'

MAP 13

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

T 15

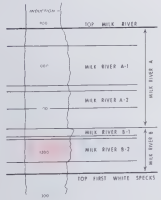
T 14

NOTES

1 Pay derived from a combination of logs

2 All evaluation wells were drilled through Milk River Formation

6-33-16-6 W4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER B-2 ZONE

NET PAY ISOPACH

CONTOUR INTERVAL 5'

MAP 14

HIGGINS MAPPING LTD.

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

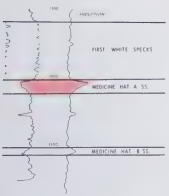
T 15

T 14

NOTE

All evaluation wells were drilled through Medicine Hat SS.

6-8-17-4 W 4



ATLEE - BUFFALO

SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MEDICINE HAT A SANDSTONE
NET PAY ISOPACH
ATLEE / BUFFALO - MEDICINE HAT POOL
CONTOUR INTERVAL 2'

MAP 15

PETCOM MAPPING LTD.

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

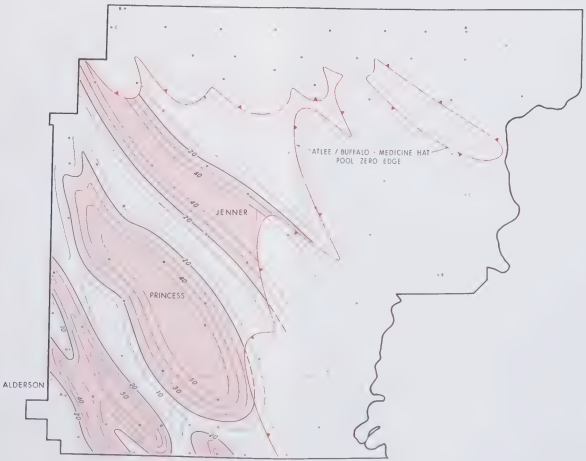
T 15

T 14

NOTE

All evaluation wells were drilled through Medicine Hat 55

6-33-16-7 W 4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MEDICINE HAT A SANDSTONE RESISTIVITY ISOPACH

ALDERSON - PRINCESS - JENNER POOLS

(HIGHER THAN 12 OHMS - 16" NORMAL CURVE)

CONTOUR INTERVAL 10'

MAP 16

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

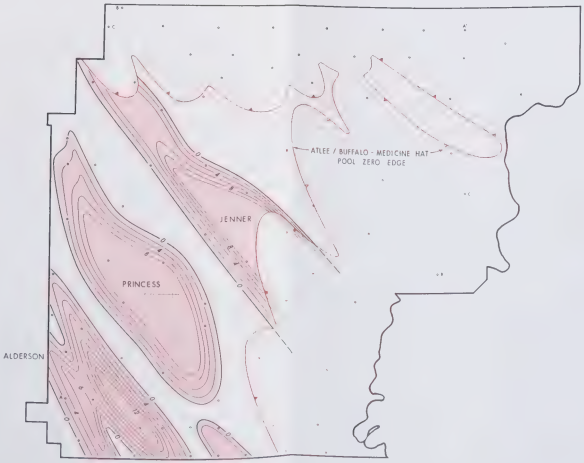
T 15

T 14

NOTE

All evaluation wells were drilled through Medicine Hat SS.

6-33-16-7 W4



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MEDICINE HAT A SANDSTONE NET PAY ISOPACH

ALDERSON - PRINCESS - JENNER POOLS

CONTOUR INTERVAL 2'

MILES

MAP 17

FIDLER MAPPING LTD

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

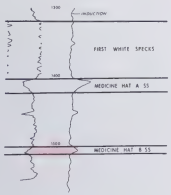
T 15

T 14

NOTE

All evaluation wells were drilled through Medicine Hat 55

6-8-17-4 W.4



Evaluation
Oil Well
Gas Well
Dry & Abandoned
Water Well
Not Penetrated

SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MEDICINE HAT B SANDSTONE
NET PAY ISOPACH

MEDICINE HAT POOL

CONTOUR INTERVAL 2'

SCALE: 1/2 INCH = 1 MILE

MAP 18

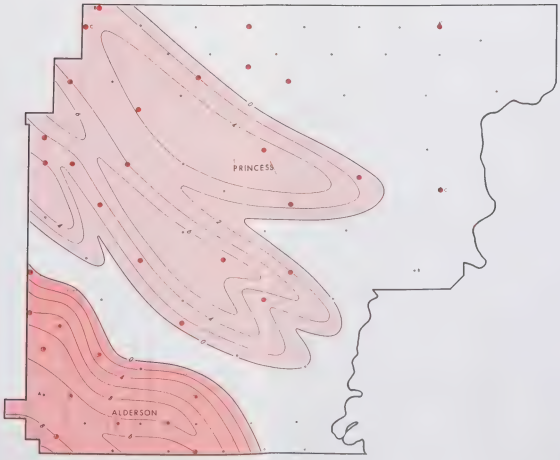
TISTEN MAPPING LTD

NOTE

● Evaluation wells drilled through Second White Specks SS.

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21
T 20
T 19
T 18
T 17
T 16
T 15
T 14



SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

SECOND WHITE SPECKS SANDSTONE
NET PAY ISOPACH
ALDERSON - PRINCESS POOLS
CONTOUR INTERVAL 2'

MILES

August 1976

MAP 19

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

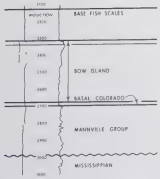
T 15

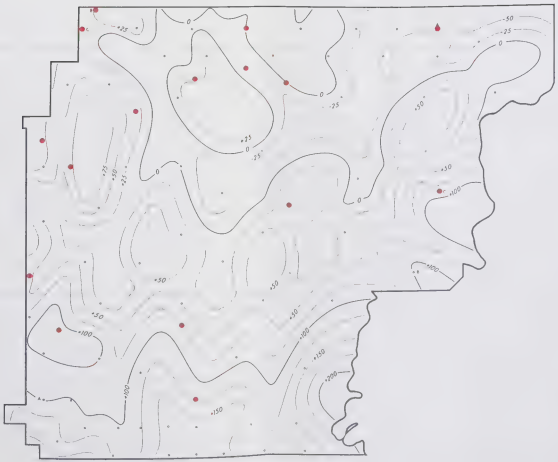
T 14

NOTE

● Evaluation wells drilled through Bow Island SS.

6-10-18-4 W 4





SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

BOW ISLAND STRUCTURE

CONTOUR INTERVAL 25'

MAP 20

TISSEN MAPPING LTD

NOTE

● Evaluation wells drilled through Bow Island SS.

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

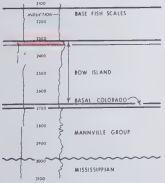
T 17

T 16

T 15

T 14

6-10-18-4 W 4



PRODUCTIVE AREA

PROSPECTIVE AREAS

SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

1st BOW ISLAND SANDSTONE
PRODUCTIVE &
PROSPECTIVE AREAS

MILES

LAST RIDDERED TO
Geology by J.N.Tuttleby August 1972

MAP 21

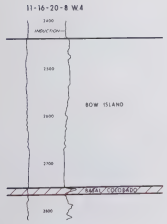
TITSEN MAPPING LTD

NOTE

● Evaluation wells drilled through Basal Colorado SS

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W4

T 21
T 20
T 19
T 18
T 17
T 16
T 15
T 14



PROSPECTIVE AREAS

SUFFIELD BLOCK OUTLINE

- Location
- Oil Well
- Gas Well
- Dry & Abandoned
- Service Well
- Not Penetrated

SUFFIELD EVALUATION COMMITTEE

BASAL COLORADO SANDSTONE
NET POROSITY ISOPACH
SHOWING PROSPECTIVE AREAS

CONTOUR INTERVAL - 5'

0 1 2 3 4 5 MILES

LAST ACCEPTER LTD
Geology by J.R. Fellerin August 1974

MAP 22

TIVEN MAPPING LTD

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

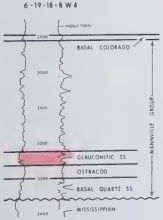
T 15

T 14

NOTE

● Evaluation wells drilled through Glauconitic SS.

6-19-18-8 W4



NET PAY

40'

ASSUMED G/W =625

INTERPRETED DEPOSITIONAL EDGE OF GLAUCONITIC SANDSTONE

PROSPECTIVE AREAS

SUFFIELD BLOCK OUTLINE

- Location
- Oil Well
- Gas Well
- Dry & Abandoned
- Service Well
- Not Penetrated

SUFFIELD EVALUATION COMMITTEE

GLAUCONITIC SANDSTONE PRODUCTIVE & PROSPECTIVE AREAS

MILES

LAST ACCEPTED
Plotted by: J.H. Fellbaum August 1974

MAP 23

TISSEN MAPPING LTD.

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

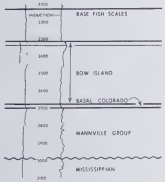
T 15

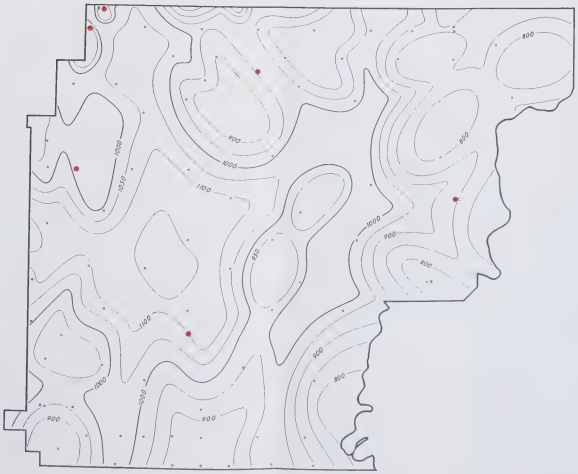
T 14

NOTE

● Evaluation wells penetrating Paleozoic Surface.

6-10-18-4 W 4





SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

BASE FISH SCALES TO PALEOZOIC ISOPACH

CONTOUR INTERVAL 50'

MILES

EAST ALCOMDALE Drawing No. EA-Isopach

August 1968

MAP 24

TAYLOR MAPPING LTD

R 10 R 9 R 8 R 7 R 6 R 5 R 4 R 3 R 2 W 4

T 21

T 20

T 19

T 18

T 17

T 16

T 15

T 14

SINGLE ZONE AREA
TWO ZONE AREA
THREE ZONE AREA
FOUR ZONE AREA
} UPPER CRETACEOUS MILK RIVER

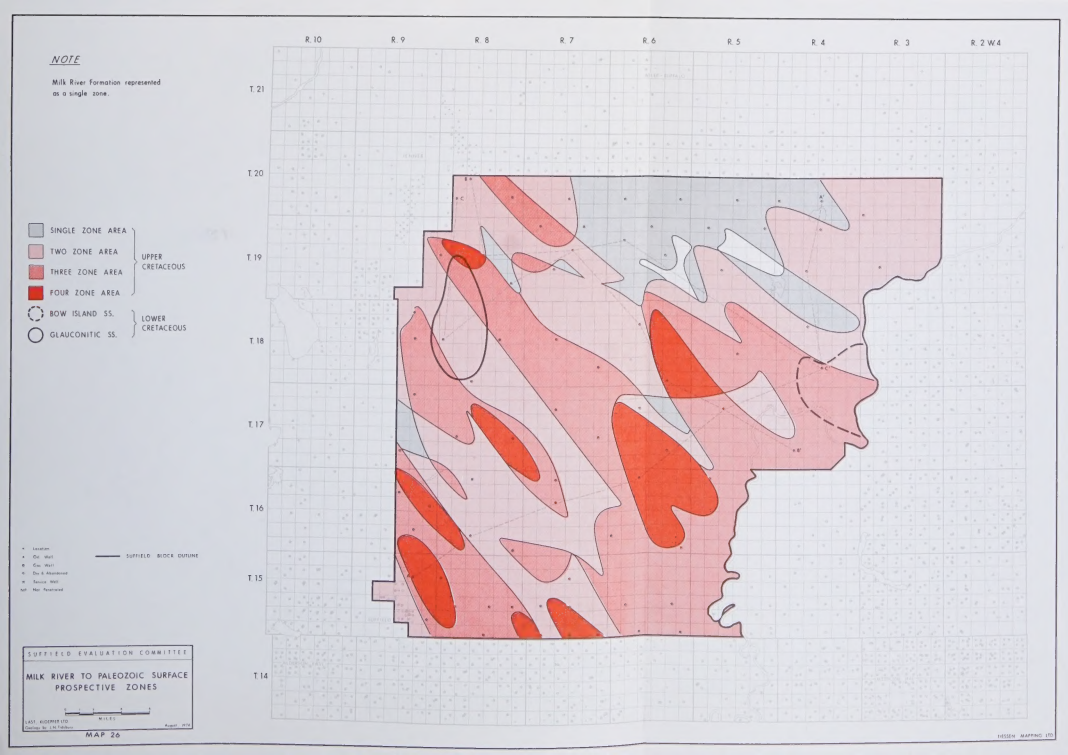
SUFFIELD BLOCK OUTLINE

SUFFIELD EVALUATION COMMITTEE

MILK RIVER FORMATION
PROSPECTIVE ZONES

MAP 25

HIGGINS MAPPING LTD.


NOTE
Milk River Formation represented as a single zone.
SINGLE ZONE AREA
TWO ZONE AREA
THREE ZONE AREA
FOUR ZONE AREA
UPPER CRETACEOUS
BOW ISLAND SS.
GLAUCONITIC SS.
LOWER CRETACEOUS
R. 10
R. 9
R. 8
R. 7
R. 6
R. 5
R. 4
R. 3
R. 2 W 4
T. 21
T. 20
T. 19
T. 18
T. 17
T. 16
T. 15
T. 14
SUFFIELD BLOCK OUTLINE
SUFFIELD EVALUATION COMMITTEE
MILK RIVER TO PALEOZOIC SURFACE PROSPECTIVE ZONES
MAP 26
THISSEN MAPPING LTD.

CA2ALM 20
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